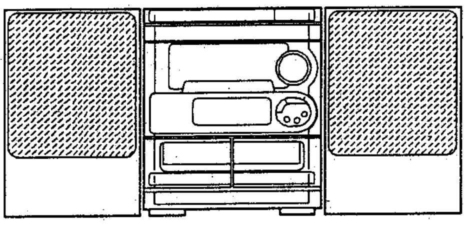
aiwa

aiwa SERVICE

NSX-A30
NSX-A31
NSX-S33



COMPACT DISC STEREO
CASSETTE RECEIVER

- BASIC TAPE MECHANISM : 6ZM-3 PR1NM<U>
  2ZM-3MK2 PR4NM<LH>
- BASIC CD MECHANISM : 4ZG-1 Z1DNM

- TYPE : LH, U

SYSTEM	SPEAKER	CD – CASSEIVER
NSX–A30 (TYPE : U)	SX – NA34	CX–NA30
NSX–A31 (TYPE : U)	SX – FNA51	CX–NA31
NSX–S33 (TYPE : LH)	SX – NS33	CX–NS33

If requiring information about the CD mechanism, see Service Manual of 4ZG-1, S/M Code No. 09-974-187-50T.

MC-Service

S/M Code No. 09–974–160–3FE

SERVICE MANUAL

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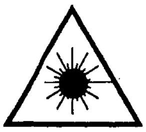
PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!
WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!
Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!
Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!
Usynlig laserståling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

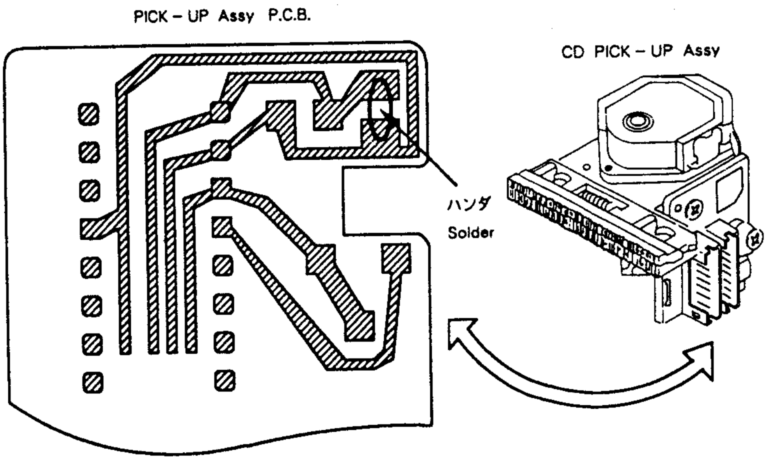
CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

Precaution to replace Optical block

(KSS - 210A)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in figure below.



SPECIFICATIONS

<FM Tuner section>

Tuning range	87.5 MHz to 108 MHz
Usable sensitivity (IHF)	13.2 dBf
Antenna terminals	75 ohms (unbalanced)

<AM Tuner section>

Tuning range	531 kHz to 1602 kHz (9 kHz step) 530 kHz to 1710 kHz (10 kHz step)
Usable sensitivity	350 µV/m
Antenna	Loop antenna

<Amplifier section>

Power output	30U : 30 W + 30 W (50Hz - 20kHz,THD less than 1%, 6 ohms) 31U : 40 W + 40 W (50Hz - 20kHz,THD less than 1%, 6 ohms) 33LH * : 85 W + 85 W (THD less than 10%, 6 ohms, 1kHz) * (without connecting to the SURROUND SPEAKERS)
Total harmonic distortion	30U : 0.05% (15 W, 1 kHz, 6 ohms DIN AUDIO) 31U : 0.05% (20 W, 1 kHz, 6 ohms DIN AUDIO) 33LH : 0.05% (43 W, 1 kHz, 6 ohms DIN AUDIO)
Inputs	VIDEO/AUX : 150 mV (adjustable) 30U : MIC : 1.8 mV (10 kohms) 33LH : MIC : 1.7 mV (10 kohms) 31U : MIC1, MIC2 : 1mV (10 kohms)
Outputs	30U, 31U : SUPER WOOFER : 1.3 V 33LH : SUPER WOOFER : 2.3 V SPEAKERS: accept speakers of 6 ohms or more SURROUND SPEAKERS : accept speakers of 16 ohms or more PHONES (stereo jack) : accepts headphones of 32 ohms or more

<Cassette deck section>

Track format	4 tracks, 2 channels stereo
Frequency response	Normal tape : 50 Hz –15000 Hz
Signal-to-noise ratio	48 dB
Recording system	AC bias
Heads	Deck 1 : Playback head x1 Deck 1 : Recording/playback/ erase head x 1

<Compact disc player section>

Laser	Semiconductor laser (λ =780 nm)
D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.05% (1 kHz, 0 dB)
Wow and flutter	Unmeasurable

<Speaker system SX-NA34>

Cabinet type	3 way, bass reflex (magnetic shielded type)
Speakers	Woofer : 140 mm ($5\frac{5}{8}$ in.) cone type Tweeter : 60 mm ($2\frac{3}{8}$ in.) cone type Super tweeter : 20 mm ($\frac{13}{16}$ in.) ceramic type
Impedance	6 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W x H x D)	240 x 304 x 250 mm ($9\frac{1}{2}$ x 12 x $9\frac{7}{8}$ in.)
Weight	2.8 kg (6 lbs 3 oz.)

<Speaker system SX-FNA51>

Cabinet type	3 way, bass reflex with surround speaker (magnetic shielded type)
Speakers	Woofer : 160 mm ($6\frac{3}{8}$ in.) cone type Tweeter : 80 mm ($3\frac{1}{4}$ in.) cone type Super tweeter : 20 mm ($\frac{13}{16}$ in.) ceramic type Surround speaker : 80 mm ($3\frac{1}{4}$ in.) cone type
Impedance	Front speaker : 6 ohms Surround speaker : 16 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W x H x D)	250 x 304 x 288 mm ($9\frac{7}{8}$ x 12 x $11\frac{3}{8}$ in.)
Weight	2.8 kg (6 lbs 3 oz.)

<Speaker system SX-NS33>

Cabinet type	3 way, bass reflex (magnetic shielded type)
Speakers	Woofer : 140 mm ($5\frac{5}{8}$ in.) cone type Tweeter : 60 mm ($2\frac{3}{8}$ in.) cone type Super tweeter : 20 mm ($\frac{13}{16}$ in.) ceramic type
Impedance	6 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W x H x D)	240 x 304 x 250 mm ($9\frac{1}{2}$ x 12 x $9\frac{7}{8}$ in.)
Weight	2.8 kg (6 lbs 3 oz.)

<General>

Power requirements	33LH : 120 V/ 220 – 230 V/240 V AC, switchable 50/60 Hz 30U, 31U : 120 V AC, 60Hz
Power consumption	33LH : 115 W 30U : 88 W 31U :110 W
Dimensions of main unit (W x H x D)	260 x 309 x 346 mm ($10\frac{1}{4}$ x $12\frac{1}{4}$ x $13\frac{5}{8}$ in.)
Weight of main unit	33LH : 6.7 kg 30U : 5.9 kg (13 lbs) 31U : 6.5 kg (14 lbs 5 oz.)

- Design and specifications are subject to change without notice.

ELECTRICAL MAIN PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-NF4-641-010		IC,LC866548V-5E15
	87-A20-448-010		IC,PIC-21043TE3
	87-A20-501-040		C-IC,BA7762FS
	87-A20-083-010		IC,BA3835S
	87-A20-450-040		C-IC,BH3864F
	87-A20-613-040		C-IC,BU9262FS<31U>
	87-A20-456-040		C-IC,BH3810FS
	87-017-888-080		C-IC,NJM4558MD
	86-NFZ-655-010		IC,LC72131D(Z)
	87-A20-438-010		IC,LA1837
	87-020-454-010		IC,DN6851
TRANSISTOR			
	87-026-263-080		C-TR,RN1410
	89-213-702-010		TR,2SB1370E
	87-A30-076-080		C-TR,2SC3052F
	87-026-610-080		TR,KTC3198GR
	87-A30-073-080		C-TR,RT1N 141C
	87-A30-085-070		C-TR,CSA1362GR
	87-A30-083-080		TR,CSD1489B
	87-A30-075-080		C-TR,2SA1235F
	87-A30-084-080		TR,CSB1058B
	87-A30-071-080		C-TR,RT1N 144C
	87-026-609-080		TR,KTA1266GR
	87-A30-086-070		C-TR,CSD1306E
	87-A30-106-070		C-TR,CMBT5551
	87-A30-111-080		TR,C2N5401
	87-A30-109-010		TR,2SD2495<30U>
	87-A30-097-010		TR,FN1016<33LH,31U>
	87-A30-108-010		TR,2SB1626<30U>
	87-A30-098-010		TR,FP1016<33LH,31U>
	87-A30-089-010		FET,2SK2723<33LH>
	87-A30-072-080		C-TR,RT1P 144C
	87-A30-087-080		C-FET,2SK2158
	87-A30-074-080		C-TR,RT1P141C
	89-327-143-080		C-TR,2SC2714 (O)
	87-026-463-080		TR,2SA933S
DIODE			
	87-A40-270-080		C-DIODE,MC2838
	87-A40-116-060		DIODE,RS403L-B-D-51
	87-A40-115-060		DIODE,RS603M<33LH>
	87-017-437-080		DIODE,1N4148M
	87-A40-246-080		DIODE,1N4148T-72
	87-A40-269-080		C-DIODE,MC2836
	87-070-274-080		DIODE,1N4003 SEM
	87-A40-344-080		ZENER,MTZJ6.2C
	87-A40-341-080		ZENER,MTZJ36A
	87-A40-345-080		ZENER,MTZJ10C
	87-A40-004-089		ZENER,MTZJ16 A
	87-A40-184-090		DIODE,RK34 (F)<33LH>
	87-070-136-080		ZENER,MTZJ5.1B
	87-017-481-080		ZENER,UZ-5.6BSB<31U>
	87-A40-003-080		ZENER,MTZJ4.3A
	87-A40-234-080		ZENER,MTZJ5.6A
MAIN C.B			
C101	87-016-055-090		CAP,E 3300-42<EXCEPT 33LH>
C101	87-016-520-090		CAP,E 3300-65 M SMG<33LH>
C102	87-016-055-090		CAP,E 3300-42<EXCEPT 33LH>
C102	87-016-520-090		CAP,E 3300-65 M SMG<33LH>
C103	87-016-589-090		CAP,E 3300-25 SSL<EXCEPT 33LH>
C103	87-016-658-090		CAP,E 4700-35 M SMG<33LH>
C104	87-016-658-090		CAP,E 4700-35 M SMG<33LH>
C105	87-012-368-080		C-CAP,S 0.1-50 Z F
C106	87-012-368-080		C-CAP,S 0.1-50 Z F
C107	87-012-368-080		C-CAP,S 0.1-50 Z F
C108	87-012-368-080		C-CAP,S 0.1-50 Z F
C109	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C110	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C111	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C112	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C113	87-010-247-080		CAP,E 100-50 M SME<EXCEPT 33LH>
C113	87-A10-417-080		CAP,E 47-63 SME<33LH>
C116	87-010-247-080		CAP,E 100-50 M SME<EXCEPT 33LH>
C116	87-A10-417-080		CAP,E 47-63 SME<33LH>
C117	87-010-430-080		CAP,E 100-63
C118	87-010-263-080		CAP,E 100-10 SME
C119	87-010-260-080		CAP,E 47-25 SME
C120	87-010-403-080		CAP,E 3.3-50 M SME
C121	87-012-140-080		C-CAP,S 470P-50 J CH
C122	87-010-263-080		CAP,E 100-10 SME<EXCEPT 33LH>
C123	87-010-247-080		CAP,E 100-50M SME
C124	87-010-112-080		CAP,E 100-16 M SME
C125	87-010-235-080		CAP,E 470-16 SME
C128	87-010-394-080		CAP,E 220-35 M SME<EXCEPT 33LH>
C129	87-010-393-080		CAP,E 100-35 M SME<33LH>
C201	87-010-400-080		CAP,E 0.47-50 M SME
C202	87-010-400-080		CAP,E 0.47-50 M SME
C205	87-010-182-080		C-CAP,S 2200P-50 K B<31U>
C205	87-010-184-080		C-CAP,S 3300P-50 K B<33LH>
C205	87-010-185-080		C-CAP,S 3900P-50 K B<30U>
C206	87-010-182-080		C-CAP,S 2200P-50 K B<31U>
C206	87-010-184-080		C-CAP,S 3300P-50 K B<33LH>
C206	87-010-185-080		C-CAP,S 3900P-50 K B<30U>
C207	87-010-404-080		CAP,E 4.7-50 M SME
C208	87-010-404-080		CAP,E 4.7-50 M SME
C209	87-010-404-080		CAP,E 4.7-50 M SME
C210	87-010-404-080		CAP,E 4.7-50 M SME
C211	87-010-186-080		C-CAP,S 4700P-50 K B
C212	87-010-186-080		C-CAP,S 4700P-50 K B
C213	87-010-260-080		CAP,E 47-25 SME
C214	87-010-260-080		CAP,E 47-25 SME
C215	87-012-368-080		C-CAP,S 0.1-50 Z F<33LH>
C219	87-012-368-080		C-CAP,S 0.1-50 Z F
C220	87-012-368-080		C-CAP,S 0.1-50 Z F
C221	87-012-368-080		C-CAP,S 0.1-50 Z F
C222	87-012-368-080		C-CAP,S 0.1-50 Z F
C223	87-010-194-080		C-CAP,S 0.047-25 Z F
C225	87-010-322-080		C-CAP,S 100P-50 J CH
C226	87-010-322-080		C-CAP,S 100P-50 J CH
C242	87-010-406-080		CAP,E 22-50 M SME
C243	87-010-197-080		C-CAP,S 0.01-25 K B<EXCEPT 33LH>
C244	87-010-406-080		CAP,E 22-50 M SME<33LH,31U>
C301	87-010-318-080		C-CAP,S 47P-50 J CH
C302	87-010-318-080		C-CAP,S 47P-50 J CH
C303	87-012-145-080		C-CAP,S 270P-50 J CH<EXCEPT 33LH>
C303	87-012-157-080		C-CAP,S 330P-50 J CH GRM<33LH>
C304	87-012-145-080		C-CAP,S 270P-50 J CH<EXCEPT 33LH>
C304	87-012-157-080		C-CAP,S 330P-50 J CH GRM<33LH>
C305	87-012-145-080		C-CAP,S 270P-50 J CH
C306	87-012-145-080		C-CAP,S 270P-50 J CH
C307	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C309	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C310	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C311	87-010-198-080		C-CAP,S 0.022-25 K B
C312	87-010-198-080		C-CAP,S 0.022-25 K B
C313	87-010-178-080		C-CAP,S 1000P-50 K B<33LH>
C313	87-010-182-080		C-CAP,S 2200P-50 K B<EXCEPT 33LH>
C314	87-010-178-080		C-CAP,S 1000P-50 K B<33LH>
C314	87-010-182-080		C-CAP,S 2200P-50 K B<EXCEPT 33LH>
C315	87-010-178-080		C-CAP,S 1000P-50 K B<33LH>
C315	87-010-182-080		C-CAP,S 2200P-50 K B<EXCEPT 33LH>
C316	87-010-178-080		C-CAP,S 1000P-50 K B<33LH>
C316	87-010-182-080		C-CAP,S 2200P-50 K B<EXCEPT 33LH>
C321	87-016-492-080		C-CAP,S 0.33-16 Z F
C322	87-016-492-080		C-CAP,S 0.33-16 Z F

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C324	87-010-260-080		CAP,E 47-25 SME
C325	87-010-370-080		CAP,E 330-6.3 M SME
C327	87-010-404-080		CAP,E 4.7-50 M SME
C328	87-010-404-080		CAP,E 4.7-50 M SME
C332	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C335	87-010-401-080		CAP,E 1-50 M SME
C336	87-010-401-080		CAP,E 1-50 M SME
C337	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C339	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C340	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C351	87-012-140-080		C-CAP,S 470P-50 J CH
C352	87-012-140-080		C-CAP,S 470P-50 J CH
C354	87-010-175-080		C-CAP,S 560P-50 J SL
C355	87-010-178-080		C-CAP,S 1000P-50 K B
C356	87-010-260-080		CAP,E 47-25 SME
C357	87-010-197-080		C-CAP,S 0.01-25 K B
C358	87-010-183-080		C-CAP,S 2700P-50 K B
C359	87-010-183-080		C-CAP,S 2700P-50 K B
C360	87-010-183-080		C-CAP,S 2700P-50 K B
C370	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C373	87-010-993-080		C-CAP,S 0.056-25 K B<EXCEPT 33LH>
C374	87-010-993-080		C-CAP,S 0.056-25 K B<EXCEPT 33LH>
C378	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C379	87-010-382-080		CAP,E 22-25 M SME
C380	87-010-382-080		CAP,E 22-25 M SME
C381	87-010-197-080		C-CAP,S 0.01-25 K B<33LH>
C382	87-010-312-080		C-CAP,S 15P-50 J CH<33LH>
C383	87-010-197-080		C-CAP,S 0.01-25 K B<33LH>
C384	87-010-402-080		CAP,E 2.2-50 M SME<33LH>
C386	87-010-196-080		C-CAP,S 0.1-25 Z F C2012<33LH>
C387	87-012-145-080		C-CAP,S 270P-50 J CH<33LH>
C388	87-010-154-080		C-CAP,S 10P-50 D CH
C421	87-010-402-080		CAP,E 2.2-50 SME
C422	87-010-402-080		CAP,E 2.2-50 SME
C516	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C605	87-010-180-080		C-CAP,S 1500P-50 K B
C606	87-010-180-080		C-CAP,S 1500P-50 K B
C611	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C615	87-010-183-080		C-CAP,S 2700P-50 K B
C619	87-010-263-080		CAP,E 100-10 SME
C620	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C621	87-010-263-080		CAP,E 100-10 SME
C622	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C623	87-010-194-080		C-CAP,S 0.047-25 Z F
C629	87-012-368-010		C-CAP,0.1-50 FZ<33LH,31U>
C646	87-010-322-080		C-CAP,S 100P-50 J CH
C647	87-010-322-080		C-CAP,S 100P-50 J CH
C701	87-010-381-080		CAP,E 330-16 SME
C702	87-010-404-080		CAP,E 4.7-50 M SME
C703	87-010-197-080		C-CAP,S 0.01-25 K B
C704	87-010-197-080		C-CAP,S 0.01-25 K B
C711	87-010-263-080		CAP,E 100-10 SME
C712	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C713	87-010-197-080		C-CAP,S 0.01-25 K B
C714	87-010-197-080		C-CAP,S 0.01-25 K B
C721	87-010-312-080		C-CAP,S 15P-50 J CH
C722	87-010-312-080		C-CAP,S 15P-50 J CH
C723	87-010-178-080		C-CAP,S 1000P-50 K B
C725	87-010-178-080		C-CAP,S 1000P-50 K B
C727	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C728	87-010-248-080		CAP,E 220-10 SME
C755	87-010-197-080		C-CAP,S 0.01-25 K B
C756	87-010-197-080		C-CAP,S 0.01-25 K B
C757	87-010-318-080		C-CAP,S 47P-50 J CH
C758	87-010-149-080		C-CAP,S 5P-50 CH
C761	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C762	87-010-197-080		C-CAP,S 0.01-25 K B
C763	87-010-194-080		C-CAP,S 0.047-25 Z F
C765	87-010-197-080		C-CAP,S 0.01-25 K B
C766	87-010-197-080		C-CAP,S 0.01-25 K B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C767	87-010-405-080		CAP,E 10-50 M SME
C768	87-010-197-080		C-CAP,S 0.01-25 K B
C769	87-010-408-080		CAP,E 47-50 SME
C770	87-015-821-080		C-CAP, 0.047-50 Z F GR
C771	87-010-407-080		CAP,E 33-50 SME
C772	87-010-194-080		C-CAP,S 0.047-25 Z F
C773	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C774	87-010-263-080		CAP,E 100-10 SME
C775	87-010-404-080		CAP,E 4.7-50 M SME
C776	87-010-197-080		C-CAP,S 0.01-25 K B
C777	87-010-400-080		CAP,E 0.47-50 M SME
C778	87-010-401-080		CAP,E 1-50 M SME
C779	87-010-401-080		CAP,E 1-50 M SME
C780	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C781	87-010-405-080		CAP,E 10-50 M SME
C782	87-010-405-080		CAP,E 10-50 M SME
C783	87-015-819-080		C-CAP,0.01-50 K B
C784	87-010-197-080		C-CAP,S 0.01-25 K B
C785	87-010-400-080		CAP,E 0.47-50 M SME
C786	87-010-400-080		CAP,E 0.47-50 M SME
C787	87-010-184-080		C-CAP,S 3300P-50 K B
C788	87-010-184-080		C-CAP,S 3300P-50 K B
C789	87-010-179-080		C-CAP,S 1200P-50 K B
C790	87-010-179-080		C-CAP,S 1200P-50 K B
C791	87-010-405-080		CAP,E 10-50 M SME
C793	87-010-178-080		C-CAP,S 1000P-50 K B
C794	87-010-406-080		CAP,E 22-50 M SME
C795	87-010-596-080		C-CAP,S 0.047-25 R K
C796	87-010-403-080		CAP,E 3.3-50 M SME
C797	87-010-182-080		C-CAP,S 2200P-50 K B
C798	87-010-182-080		C-CAP,S 2200P-50 K B
C799	87-010-194-080		C-CAP,S 0.047-25 Z F
C812	87-010-197-080		C-CAP,S 0.01-25 K B
C814	87-010-197-080		C-CAP,S 0.01-25 K B
C820	87-010-408-080		CAP,E 47-50 SME
C821	87-010-197-080		C-CAP,S 0.01-25 K B
C822	87-010-197-080		C-CAP,S 0.01-25 K B
C823	87-010-197-080		C-CAP,S 0.01-25 K B
C828	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C829	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C959	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C960	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C961	87-010-152-080		C-CAP,S 8P-50 D CH
CF801	87-008-261-010		FLTR,CFSFE10.7MA5
CF802	87-008-261-010		FLTR,CFSFE10.7MA5
⚠F101	87-035-416-010		FUSE,3A 250V T239<31U>
⚠FC1	87-033-147-010		FUSE CLAMP,MT-20<33LH>
⚠FC2	87-033-147-010		FUSE CLAMP,MT-20<33LH>
⚠FC3	87-033-147-010		FUSE CLAMP,MT-20<33LH>
⚠FC4	87-033-147-010		FUSE CLAMP,MT-20<33LH>
FFE801	A8-7ZA-290-030		7ZA-2 FEUNM<EXCEPT 30U>
FFE801	A8-7ZA-291-030		7ZA-2 YFEUNM<30U>
⚠FR230	87-A90-210-010		FUSE,7A 125V 251<EXCEPT 33LH>
⚠FR236	87-A90-210-010		FUSE,7A 125V 251<EXCEPT 33LH>
J252	87-A60-024-010		JACK,DIA6.3 BLK ST W/SW KM
J253	87-099-474-010		JACK,PIN 3P BLK W/SW
J254	87-A60-238-010		TERMINAL,SP 4P (MSC)
J601	87-A60-425-010		JACK,PIN 2P YKC21
J801	87-A60-202-010		TERMINAL,ANT 4P MSP-154V-02
L201	87-003-383-010		COIL,1UH K
L202	87-003-383-010		COIL,1UH K
L301	87-A50-049-010		COIL,TRAP 85K(COI)
L302	87-A50-049-010		COIL,TRAP 85K(COI)
L351	87-007-342-010		COIL,OSC 85KHZ BIAS
L601	87-003-231-010		C-COIL,1UH K<33LH,31U>
L770	87-005-849-080		COIL,10UH K CECS
L771	87-A50-165-010		COIL,FM DET-N(TOK)
L772	87-A90-245-010		FLTR,CFAZH-450 (TOK)
L832	87-005-847-080		COIL,2.2UH K CECS
L981	87-NF4-650-010		COIL,AM PACK4N(TOK)

NOTES: F101,FC3 AND FC4 ARE NOT USE.
FC1 AND FC2 BELONGS TO PT C.B PARTS

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
⚠PR5	87-026-682-080		PROTECTOR,10A 491SERIES 60V<33LH>
⚠PR6	87-026-682-080		PROTECTOR,10A 491SERIES 60V<33LH>
⚠PR201	87-A90-195-080		PROTECTOR,7A 491SERIES 125V<33LH>
⚠PR202	87-A90-195-080		PROTECTOR,7A 491SERIES 125V<33LH>
R123	87-022-200-080		RES,M/F 0.56-1W J<EXCEPT 33LH>
R229	87-A00-257-080		RES,M/F 0.15-1W J
R230	87-A00-257-080		RES,M/F 0.15-1W J
RY101	87-045-389-010		RELAY,12V OSA-SS-212DM5
RY201	87-045-382-010		RELAY,12V OUAZ-SH-112L<31U>
SFR301	87-024-438-080		SFR,220K H RH063MC
SFR302	87-024-438-080		SFR,220K H RH063MC
SFR303	87-024-438-080		SFR,220K H RH063MC
SFR304	87-024-438-080		SFR,220K H RH063MC
SFR351	87-024-436-080		SFR,47K H RH063MC
SFR352	87-024-436-080		SFR,47K H RH063MC
W1	85-NF5-628-010		F-CABLE,7P-2.5
X721	87-A70-061-010		VIB,XTAL 4.500MHZ CSA-309

FRONT C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C101	87-010-198-080		C-CAP,S 0.022-25 K B
C102	87-010-198-080		C-CAP,S 0.022-25 K B
C103	87-010-197-080		C-CAP,S 0.01-25 K B
C104	87-010-312-080		C-CAP,S 15P-50 J CH
C105	87-010-316-080		C-CAP,S 33P-50 J CH
C106	87-010-320-080		C-CAP,S 68P-50 J CH
C107	87-012-157-080		C-CAP,S 330P-50 J CH GRM
C108	87-010-405-040		CAP,E 10-50 M SME
C109	87-010-494-040		CAP,E 1-50 5L SRE
C110	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C111	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C112	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C113	87-A10-189-040		CAP,E 220-10 M
C114	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C115	87-010-178-080		C-CAP,S 1000P-50 K B
C116	87-010-401-040		CAP,E 1-50 M SME
C117	87-010-550-040		CAP,E 100-6.3 5L SRE
C118	87-010-194-080		C-CAP,S 0.047-25 Z F
C119	87-010-408-040		CAP,E 47-50 M SME
C120	87-010-404-040		CAP,E 4.7-50 SME
C121	87-010-404-040		CAP,E 4.7-50 SME
C122	87-010-194-080		C-CAP,S 0.047-25 Z F
C123	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C124	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C127	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C128	87-010-178-080		C-CAP,S 1000P-50 K B
C351	87-012-158-080		C-CAP,S 390P-50 J CH GRM
C352	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C353	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C354	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C355	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C356	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C357	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C403	87-010-596-080		C-CAP,S 0.047-16 K R
C404	87-010-596-080		C-CAP,S 0.047-16 K R
C405	87-010-401-040		CAP,E 1-50 M SME
C406	87-010-401-040		CAP,E 1-50 M SME
C407	87-010-184-080		C-CAP,S 3300P-50 K B
C408	87-010-184-080		C-CAP,S 3300P-50 K B
C409	87-010-593-080		C-CAP,S 0.027-16 K R
C410	87-010-593-080		C-CAP,S 0.027-16 K R
C411	87-016-463-080		C-CAP,0.33-16 K B
C412	87-016-463-080		C-CAP,0.33-16 K B
C413	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C414	87-010-374-040		CAP,E 47-10 SME
C415	87-010-374-040		CAP,E 47-10 SME
C416	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C417	87-016-081-080		C-CAP,S 0.1-16 K R
C418	87-010-405-040		CAP,E 10-50 M SME
C501	87-010-319-080		C-CAP,S 56P-50 J CH<31U>
C502	87-010-319-080		C-CAP,S 56P-50 J CH<31U>
C503	87-012-393-080		C-CAP,S 0.22-16 K W5R CM/CB<31U>
C504	87-010-197-080		C-CAP,S 0.01-25 K B<31U>
C505	87-010-180-080		C-CAP,S 1500P-50 K B<31U>
C506	87-010-213-080		C-CAP,S 0.015-25K B<31U>
C507	87-010-213-080		C-CAP,S 0.015-25K B<31U>
C508	87-010-197-080		C-CAP,S 0.01-25 K B<31U>
C509	87-010-181-080		C-CAP,S 1800P-50 K B<31U>
C510	87-010-196-080		C-CAP,S 0.1-25 Z F C2012<31U>
C511	87-010-196-080		C-CAP,S 0.1-25 Z F C2012<31U>
C512	87-010-374-040		CAP,E 47-10 SME<31U>
C513	87-010-494-040		CAP,E 1-50 5L SRE<31U>
C514	87-010-494-040		CAP,E 1-50 5L SRE<31U>
C515	87-010-183-080		C-CAP,S 2700P-50 K B<31U>
C516	87-010-183-080		C-CAP,S 2700P-50 K B<31U>
C518	87-010-196-080		C-CAP,S 0.1-25 Z F C2012<31U>
C519	87-015-677-040		CAP,E 100-6.3 M 7L SRA<31U>
C523	87-012-393-080		C-CAP,S 0.22-16 K W5R CM/CB<31U>
C601	87-010-560-040		CAP,E 10-50 M 5L MA
C602	87-010-186-080		C-CAP,S 4700P-50 K B<31U>
C603	87-010-498-040		CAP,E 10-16 M 5L SRE<31U>
C604	87-010-499-040		CAP,E 22-6.3 M 5L SRE<31U>
C605	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C607	87-010-321-080		C-CAP,S 82P-50 J CH
C608	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C609	87-010-491-040		CAP,E 0.22-50 5L SRE
C611	87-010-177-080		C-CAP,S 820P-50 J SL
C614	87-010-248-040		CAP,E 220-10 M SME
FB601	87-008-372-080		FLTR,EMIBL01 RN1
FL101	87-NF7-603-010		FL,BJ532GK
J601	87-A60-284-010		JACK,3.5MO (MSC)
J602	87-A60-284-010		JACK,3.5MO (MSC)<31U>
L501	87-005-448-080		COIL,220UH K FLR50<31U>
S302	87-A90-164-080		SW,TACT SKQNAB(N)
S302	87-A90-164-080		SW,TACT SKQNAB(N)
S304	87-A90-164-080		SW,TACT SKQNAB(N)
S305	87-A90-164-080		SW,TACT SKQNAB(N)
S306	87-A90-164-080		SW,TACT SKQNAB(N)
S307	87-A90-164-080		SW,TACT SKQNAB(N)
S308	87-A90-164-080		SW,TACT SKQNAB(N)<33LH>
S309	87-A90-164-080		SW,TACT SKQNAB(N)
S310	87-A90-164-080		SW,TACT SKQNAB(N)
S311	87-A90-164-080		SW,TACT SKQNAB(N)
S312	87-A90-164-080		SW,TACT SKQNAB(N)
S313	87-A90-164-080		SW,TACT SKQNAB(N)
S314	87-A90-164-080		SW,TACT SKQNAB(N)
S315	87-A90-164-080		SW,TACT SKQNAB(N)
S316	87-A90-164-080		SW,TACT SKQNAB(N)
S317	87-A90-164-080		SW,TACT SKQNAB(N)
S318	87-A90-164-080		SW,TACT SKQNAB(N)
S319	87-A90-164-080		SW,TACT SKQNAB(N)
S320	87-A90-164-080		SW,TACT SKQNAB(N)
S326	87-A90-164-080		SW,TACT SKQNAB(N)<31U>
S327	87-A90-164-080		SW,TACT SKQNAB(N)<31U>
S328	87-A90-164-080		SW,TACT SKQNAB(N)
S329	87-A90-164-080		SW,TACT SKQNAB(N)
S330	87-A90-164-080		SW,TACT SKQNAB(N)<30U,33LH>
S331	87-A90-164-080		SW,TACT SKQNAB(N)
S332	87-A90-164-080		SW,TACT SKQNAB(N)
S337	87-A90-164-080		SW,TACT SKQNAB(N)
SW101	87-A90-535-010		SW,RTRY EC16B24304-WO
VR601	86-NFA-607-010		VR,RTRY 10K15AX1<30U,33LH>
X101	87-A70-070-080		VIB,CER 5.76MHZ CRHF

AC1 C.B <30U,31U>

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
⚠F101	87-035-415-010		FUSE,2.5A 250V T239<30U>

NOTES: PR5 AND PR6 BELONGS TO AC2 C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
⚠ F101	87-035-416-019		FUSE, 3A 250V T239<31U>
⚠ FC1	87-033-213-080		FUSE CLAMP,PFC5000
⚠ FC2	87-033-213-080		FUSE CLAMP,PFC5000
⚠ PT101	87-NF7-609-010		PT,7NF-7U<30U>
⚠ PT101	87-NF7-611-010		PT,7NF-7U1<31U>
⚠ T1	87-A60-317-010		TERMINAL, 1P MSC
⚠ T2	87-A60-317-010		TERMINAL, 1P MSC

AC2 C.B

⚠ PR1	87-A90-195-080		PROTECTOR, 7A 491SERIES 125V<33LH>
⚠ PR1	87-022-200-080		RES,M/F 0.56-1W J<EXCEPT 33LH>
⚠ PR2	87-A90-195-080		PROTECTOR, 7A 491SERIES 125V<33LH>
⚠ PR2	87-022-200-080		RES,M/F 0.56-1W J<EXCEPT 33LH>
⚠ PR5	87-A90-210-080		FUSE,7A 125V 251<EXCEPT 33LH>
⚠ PR5	87-026-682-080		PROTECTOR, 10A 491SERIES 60V<33LH>
⚠ PR6	87-A90-210-080		FUSE, 7A 125V 251<EXCEPT 33LH>
⚠ PR6	87-026-682-080		PROTECTOR, 10A 491SERIES 60V<33LH>

PT C.B<33LH>

⚠ F101	87-035-368-010		FUSE,4A 250V T
⚠ FC1	87-033-147-010		FUSE CLAMP,MT20
⚠ FC2	87-033-147-010		FUSE CLAMP,MT20
⚠ PT101	87-NF7-605-010		PT,7NF-7LH
⚠ SW1	87-A90-651-010		SW,SL 1-2-3 SWS2301
⚠ T1	87-A60-317-010		TERMINAL, 1P MSC
⚠ T2	87-A60-317-010		TERMINAL, 1P MSC

DECK C.B<33LH>

CON502	87-099-756-019		CONN, 15P 9604 S F
SFR1	87-024-581-019		SFR,3.3K DIA 6H
SOL1	82-ZM1-618-010		SOL ASSY, 27
SOL2	82-ZM1-618-010		SOL ASSY, 27
SW1	87-A90-248-019		SW,MICRO ESE11SH2CXQ
SW2	87-A90-248-019		SW,MICRO ESE11SH2CXQ
SW3	87-A90-248-019		SW,MICRO ESE11SH2CXQ
SW4	87-036-110-010		SW,MICRO SPPB62
SW5	87-036-110-010		SW,MICRO SPPB62
SW6	87-036-110-010		SW,MICRO SPPB62
SW8	87-A90-248-019		SW,MICRO ESE11SH2CXQ
SW9	87-036-110-010		SW,MICRO SPPB62
W001	82-ZM3-601-019		RBN,CORD,4P-75

HEAD-1 C.B<33LH>

	85-ZM3-602-010		PWB,FLEX A

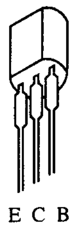
HEAD-2 C.B<33LH>

	85-ZM3-602-010		PWB,FLEX A

DECK C.B<30/31U>

CON301	86-ZM3-604-019		CON ASSY,3P-PB
CON351	86-ZM3-605-019		CON ASSY,8P-RPB
CON502	87-099-753-019		CONN,11P H 9604
SFR1	87-024-581-089		SFR,3.3K DIA 6H
SOL1	82-ZM1-618-010		SOL ASSY, 27
SOL2	82-ZM1-618-010		SOL ASSY, 27
SW1	87-A90-248-010		SW, MICRO ESE11SH2CXQ.
SW2	87-A90-248-010		SW, MICRO ESE11SH2CXQ
SW3	87-A90-248-010		SW, MICRO ESE11SH2CXQ
SW4	87-A90-248-010		SW, MICRO ESE11SH2CXQ
SW5	87-A90-248-010		SW, MICRO ESE11SH2CXQ
W1	82-ZM3-601-019		RBN-CORD,4P-75

TRANSISTOR ILLUSTRATION



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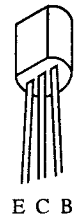

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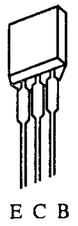

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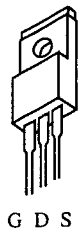

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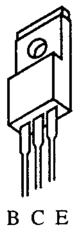

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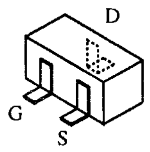

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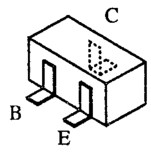

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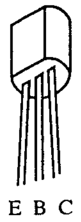

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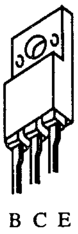
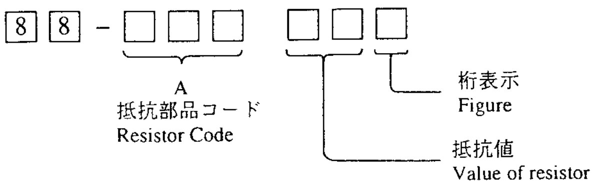


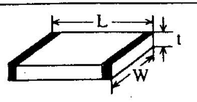
2SB1626
2SD2495

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding


8 8 - □□□ □□□
A
抵抗部品コード
Resistor Code
桁表示
Figure
抵抗値
Value of resistor

チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード ：A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

IC DESCRIPTION

IC, LC866548V-5E15

Pin No.	Pin Name	I/O	Description
1	RT-A	I	Rotary encoder A input.
2	RT-B	I	Rotary encoder B input.
3	$\overline{\text{LED-MD}}$	O	"MD" LED $\overline{\text{ON}}$/OFF output.
4	$\overline{\text{LED-CD}}$	O	"CD " LED $\overline{\text{ON}}$/OFF output.
5	$\overline{\text{LED-AUX}}$	O	"AUX" LED $\overline{\text{ON}}$/OFF output.
6	$\overline{\text{LED-TUNER}}$	O	"TUNER" LED $\overline{\text{ON}}$/OFF output.
7	$\overline{\text{LED-TAPE}}$	O	"TAPE" LED $\overline{\text{ON}}$/OFF output.
8	HSP	O	Tape deck motor high speed ON/$\overline{\text{OFF}}$ output.
9	$\overline{\text{O-POWER}}$	O	System power supply $\overline{\text{ON}}$/OFF output.
10	O-MUTE	O	System mute ON/$\overline{\text{OFF}}$ output.
11	$\overline{\text{O-CLK-SHIFT}}$	O	U-COM clock shift output.
12	$\overline{\text{RESET}}$	I	Reset input.
13	$\overline{\text{I-HP-MUTE}}$	–	Not connected.
14	I-DISH	I	CD turntable photo sensor A/D converter input.
15	VSS 1	–	GND.
16	CF 1	–	5.76MHz oscillator circuit.
17	CF 2	–	
18	VDD 1	–	Power supply input.
19	$\overline{\text{HOLD}}$	I	Power failure detected input "1" to stop clock and main memory.
20	KEY-1	I	KEY input. (A/D)
21	KEY-2	I	
22	KEY-3	I	
23	I-CD SW	I	CD mechanical switch A/D converter input.
24	I-MIC	I	Microphone input for AUTO VF display.
25	I-TU-SIG/$\overline{\text{MS}}$	I	Tuner signal and deck music sensor signal input.
26	I-SPEANA	I	A/D input for spectrum analyzer display.
27	I-WRQ/RDS-CLK	I	CD WRQ input . TUNER RDS CLOCK input.
28	I-TM-BASE	I	REFERENCE CLOCK input for timer watch.
29	I-$\overline{\text{RMC}}$	I	System remote control signal input.
30~37	G9~G2	O	FL GRID output G2~G9.
38~43	P32~P27	O	FL SEGMENT output P27~P32.
44	G1	O	FL grid output G1.
45	P26	–	FL SEGMENT output P26.
46	VDD3	–	Power supply input.
47	SPEANA-A/P25	O	Spectrum analyzer band switching output /FL segment P25 output.
48	SPEANA-B/P24	O	Spectrum analyzer band switching output /FL segment P24 output.
49	SPEANA-C/P23	O	Spectrum analyzer band switching output /FL segment P23 output.
50	P22/H-DUBB INH	I /O	FL segment P22 output / high dubbing inhibit input to diode.
51	VP	–	Power supply input for FL display.
52	P21/AM-ST	I /O	FL segment P21 output / AM stereo input to diode.
53	P20/LW	I/O	FL segment P20 output / LW mode data input to diode.
54	P19/SW	I/O	FL segment P19 output / SW mode data input to diode.

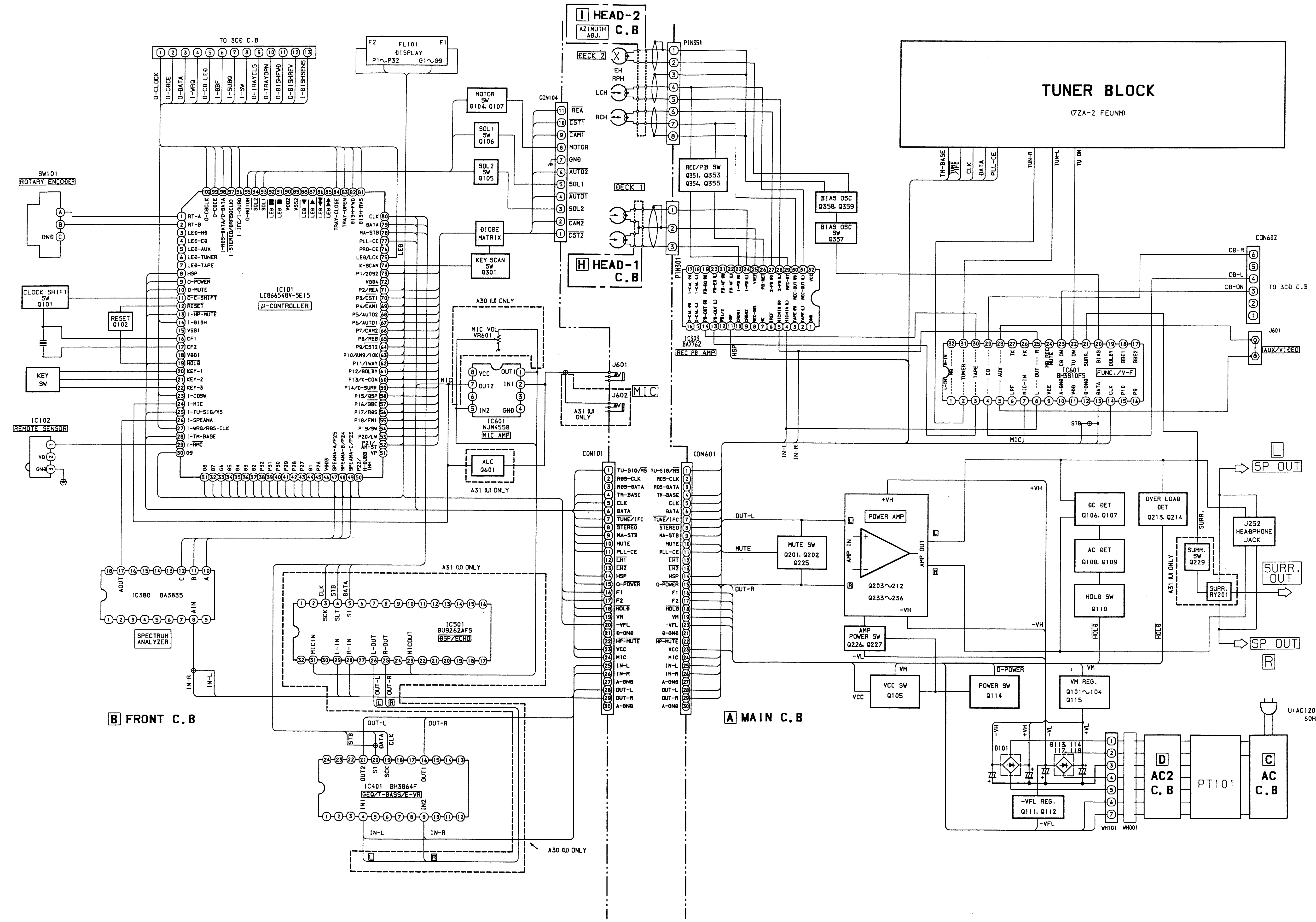
Pin No.	Pin Name	I/O	Description
55	P18/FM 1	I/O	FL segment P18 output / FM1 (OIRT) data input to diode.
56	P17/RDS	I/O	FL segment P17 output / RDS data input to diode.
57	P16/BBE	I/O	FL segment P16 output / BBE data input to diode.
58	P15/DSP	I/O	FL segment P15 output / DSP data input to diode.
59	P14/DOLBY-SURR	I/O	FL segment P14 output / DOLBY-SURR data input to diode.
60	P13/K-CON	I/O	FL segment P13 output / K-CON data input to diode.
61	P12/DOLBY	I/O	FL segment P12 output / DOLBY data input to diode.
62	P11/WAY	I/O	FL segment P11 output / DECK/WAY MECHA data input to diode.
63	P10/AM-9K/10K	I/O	FL segment P10 output / INITIAL AM 10 kHz step data input to diode.
64	P9/CST 2	I/O	FL segment P9 output / DECK2 cassette detect switch data input.
65	P8/REB	I/O	FL segment P8 output / DECK2 side-B record OK switch data input.
66	P7/CAM 2	I/O	FL segment P7 output / DECK2 CAM switch data input.
67	P6/AUTO 1	I/O	FL segment P6 output / DECK1 AUTO stop signal input.
68	P5/AUTO 2	I/O	FL segment P5 output / DECK2 AUTO stop signal input.
69	P4/CAM 1	I/O	FL segment P4 output / DECK1 CAM switch data input.
70	P3/CST 1	I/O	FL segment P3 output / DECK1 cassette detect switch data input.
71	P2/REA	I/O	FL segment P2 output / DECK2 side A record OK switch data input.
72	VDD 4	–	Power supply input.
73	P1/2092	I/O	FL segment P1 output / SHIFT resistor IC 2092 data input to diode.
74	K-SCAN	O	Switch SCAN timing output.
75	L CK	O	Latch clock output for front shift resistor.
76	PRO-CE	O	PRO LOGIC IC chip enable output.
77	PLL-CE	O	PLL IC chip enable output.
78	MA-STB	O	Latch strobe output for MAIN PWB.
79	DATA	O	DATA output for MAIN, FORNT, PROLOGIC PWB.
80	CLK	O	CLOCK output for MAIN,FORNT, PROLOGIC PWB.
81	DISH-RVS	O	CD turntable reverse rotation output.
82	DISH-FWD	O	CD turntable forward rotation output.
83	TRAY-OPEN	O	CD TRAY OPEN data output.
84	TRAY-CLOSE	O	CD TRAY CLOSE data output.
85	$\overline{\text{LED}}$ ►►	O	►► LED $\overline{\text{ON}}$/OFF output.
86	$\overline{\text{LED}}$ ◄◄	O	◄◄ LED $\overline{\text{ON}}$/OFF output.
87	$\overline{\text{LED}}$ ►	O	► LED $\overline{\text{ON}}$/OFF output.
88	$\overline{\text{LED}}$ ◄	O	◄ LED $\overline{\text{ON}}$/OFF output.
89	VSS 2	–	GND.
90	VDD 2	–	Power supply input.
91	$\overline{\text{LED}}$ ■	O	■ LED $\overline{\text{ON}}$/OFF output.
92	$\overline{\text{LED}}$ ❚❚	O	❚❚ LED $\overline{\text{ON}}$/OFF output.
93	$\overline{\text{SOL 1}}$	O	DECK 1 Solenoid output.
94	$\overline{\text{SOL 2}}$	O	DECK 2 Solenoid output.
95	O-MOTOR	O	DECK MOTOR ON/$\overline{\text{OFF}}$ output.
96	I-IFC/I-SUB Q	I	Tune IF count serial data input /CD SUB Q data input.

Pin No.	Pin Name	I/O	Description
97	I-STEREO/O-SQCLK	I/O	Tuner stereo detected input/CD SQ CLOCK output.
98	I-RDS-DATA/O-DATA	I/O	RDS data input/CD data output.
99	O-CD CE	O	CD CE output.
100	O-CD CLK	O	CD CLOCK output.

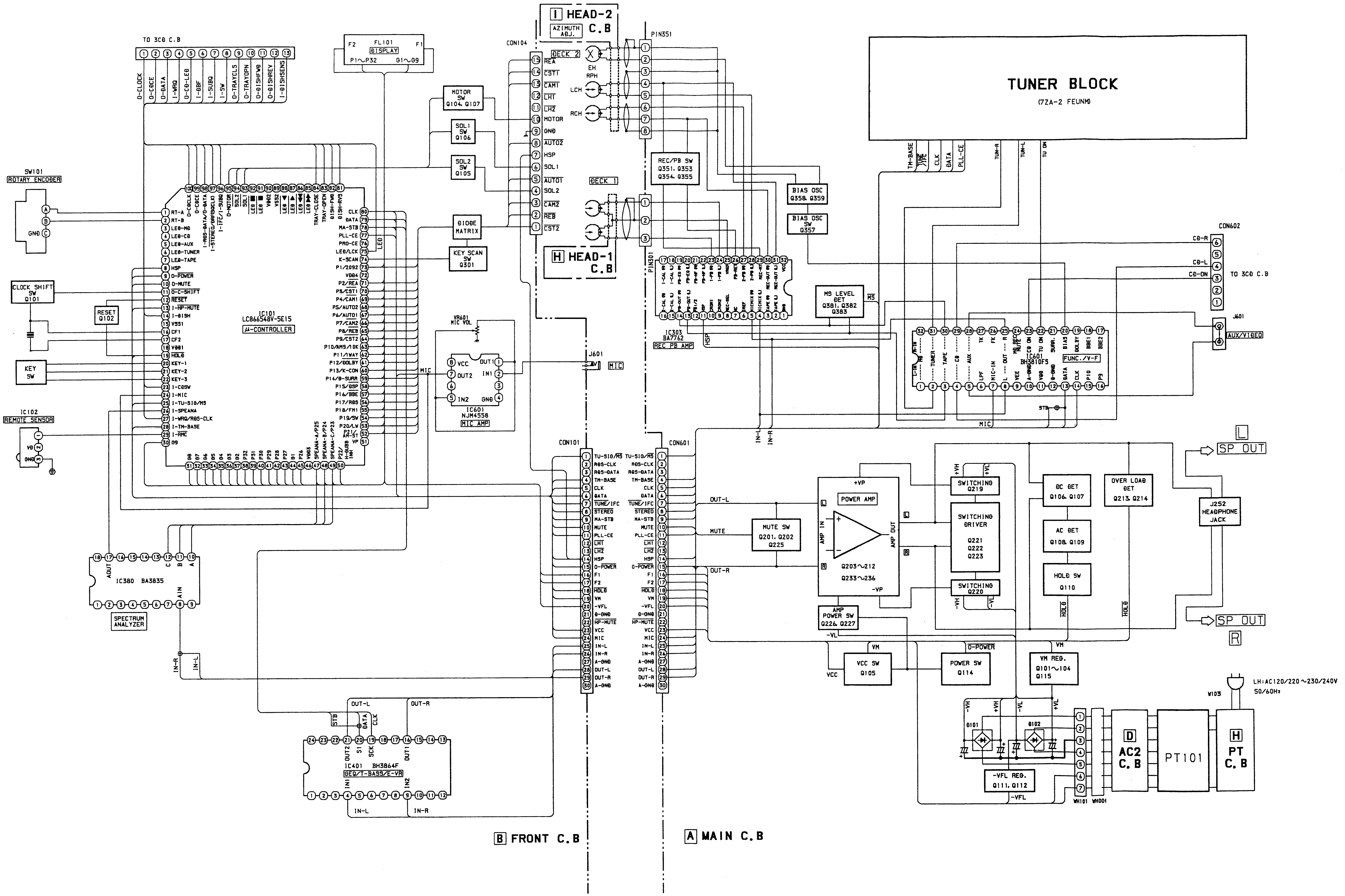
IC, LC72131

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>1</td><td>XIN</td><td rowspan="2">I/O</td><td rowspan="2">A crystal oscillator (7.2MHz) is connected between these pins.</td></tr>
<tr><td>22</td><td>XOUT</td></tr>
<tr><td>2</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>3</td><td>CE</td><td>I</td><td>To enable the IC. Active "H".</td></tr>
<tr><td>4</td><td>DI</td><td>I</td><td>Digital data input from CPU (LC866548V-5E15) when relevant key is operated. Active "H".</td></tr>
<tr><td>5</td><td>CLK</td><td>I</td><td>To clock in the data DI.</td></tr>
<tr><td>6</td><td>DO</td><td>O</td><td>Digital data output to CPU (LC866548V-5E15).</td></tr>
<tr><td>7</td><td>TM-BASE</td><td>O</td><td>Outputs a reference clock signal (8Hz) for the clock.</td></tr>
<tr><td>8</td><td>$\overline{\text{MONO}}$ / BEAT</td><td>O</td><td>Outputs "H" when MONO / BEAT is switched.</td></tr>
<tr><td>9</td><td>$\overline{\text{FM}}$ / AM</td><td>O</td><td>Output "L" or "H" as follows:
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><td>AM</td><td>FM</td><td>LW</td><td>MW</td><td>FM</td><td>MW</td><td>SW</td><td>FM</td></tr>
<tr><td>H</td><td>L</td><td>H</td><td>H</td><td>L</td><td>H</td><td>L</td><td>L</td></tr>
</table></td></tr>
<tr><td>10</td><td>$\overline{\text{MW}}$</td><td>O</td><td>Outputs "L" or "H" as follows:
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><td>AM</td><td>FM</td><td>LW</td><td>MW</td><td>FM</td><td>MW</td><td>SW</td><td>FM</td></tr>
<tr><td>L</td><td>L</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td><td>L</td></tr>
</table></td></tr>
<tr><td>11</td><td>IF-MUTE</td><td>O</td><td>To control internal counter.</td></tr>
<tr><td>12</td><td>IFIN</td><td>I</td><td>General purpose counter input.</td></tr>
<tr><td>13</td><td>TUNE</td><td>I</td><td>Receives "L" when station is tuned.</td></tr>
<tr><td>14</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>15</td><td>A MIN</td><td>I</td><td>Receives the AM local oscillator frequency signal.</td></tr>
<tr><td>16</td><td>F MIN</td><td>I</td><td>Receives the FM local oscillator frequency signal.</td></tr>
<tr><td>17</td><td>VDD</td><td>–</td><td>Supply power to IC (+5V).</td></tr>
<tr><td>18</td><td>PD</td><td>O</td><td>PLL charge pump output.</td></tr>
<tr><td>19</td><td>AIN</td><td>I</td><td rowspan="2">The MOS transistor for PLL active low pass filter.</td></tr>
<tr><td>20</td><td>AOUT</td><td>O</td></tr>
<tr><td>21</td><td>VSS</td><td>–</td><td>Ground.</td></tr>
</table>

BLOCK DIAGRAM – 1 (MAIN: A30/31<U>)

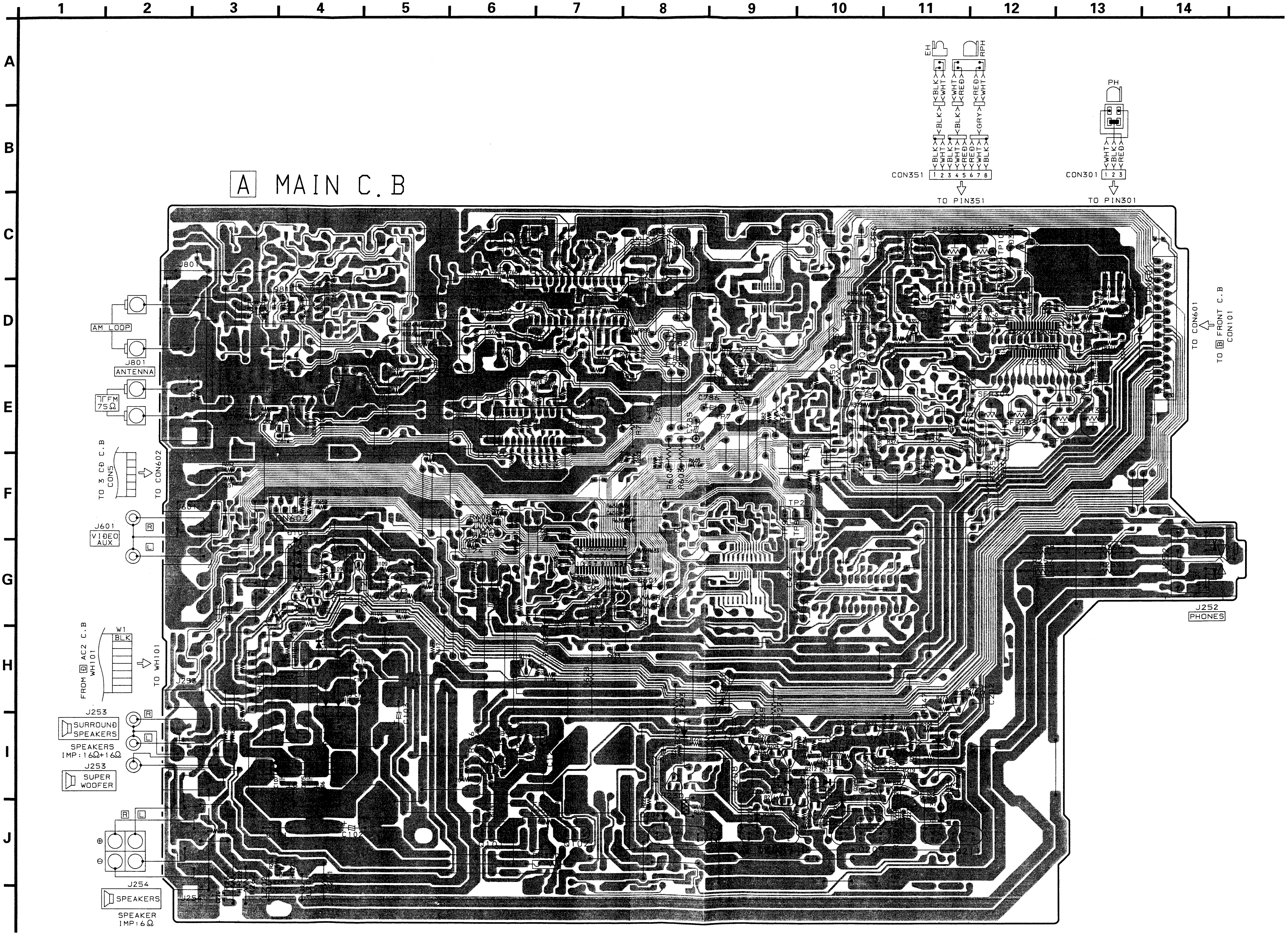

TO 3CD C.B
FL101 DISPLAY
F2 F1
P1~P32 G1~G9
SW101 ROTARY ENCODER
GND
CLOCK SHIFT SW Q101
RESET Q102
KEY SW
IC102 REMOTE SENSOR
MOTOR SW Q104, Q107
SOL1 SW Q106
SOL2 SW Q105
DIODE MATRIX
KEY SCAN SW Q301
IC101 LC866548V-5E15 μ-CONTROLLER
CON104
REA
CST1
CAM1
MOTOR
GND
AUTO2
SOL1
AUTO1
SOL2
CAM2
CST2
I HEAD-2 C.B
AZIMUTH ADJ.
DECK 2
EH RPH
LCH
RCH
PIN351
DECK 1
H HEAD-1 C.B
PIN301
REC/PB SW Q351, Q353 Q354, Q355
BIAS OSC Q358, Q359
BIAS OSC SW Q357
IC303 BA7762 REC PB AMP
TUNER BLOCK
(7ZA-2 FEUNM)
TM-BASE
TAPE
CLK
DATA
PLL-CE
TUN-R
TUN-L
TU ON
CON602
CD-R
CD-L
CD-ON
TO 3CD C.B
J601
AUX/VIDEO
IC601 BH3810FS FUNC./V-F
STB
MIC
A30 (U) ONLY
MIC VOL VR601
IC601 NJM4558 MIC AMP
VCC OUT1 OUT2 IN1 IN2 GND
J601
J602
MIC
A31 (U) ONLY
ALC Q601
A31 (U) ONLY
CON101
CON601
TU-SIG/MS
RDS-CLK
RDS-DATA
TM-BASE
CLK
DATA
TUNE/1FC
STEREO
MA-STB
MUTE
PLL-CE
LH1
LH2
HSP
O-POWER
F1
F2
HOLD
VM
-VFL
D-GND
HP-MUTE
VCC
MIC
IN-L
IN-R
A-GND
OUT-L
OUT-R
A-GND
IN-L
IN-R
OUT-L
MUTE
OUT-R
MUTE SW Q201, Q202 Q225
+VH
POWER AMP
AMP IN
AMP OUT
Q203~212
Q233~236
-VH
AMP POWER SW Q226, Q227
-VL
DC DET Q106, Q107
AC DET Q108, Q109
HOLD SW Q110
OVER LOAD DET Q213, Q214
SURR.
A31 (U) ONLY
SURR. SW Q229
SURR. RY201
J252 HEADPHONE JACK
L SP OUT
SURR. OUT
SP OUT R
VCC SW Q105
VCC
VM
O-POWER
POWER SW Q114
VM REG. Q101~104 Q115
D101
D113, 114 117, 118
-VFL REG. Q111, Q112
-VFL
WH101 WH001
D AC2 C.B
PT101
C AC C.B
U:AC120V 60Hz
IC380 BA3835
AOUT
SPECTRUM ANALYZER
IN-R
IN-L
B FRONT C.B
A31 (U) ONLY
IC501 BU9262AFS DSP/ECHO
CLK STB DATA
SCK SLT SI
MICIN L-IN R-IN L-OUT R-OUT MICOUT
OUT-L OUT-R
L R
STB DATA CLK
OUT-L OUT-R
IC401 BH3864F GEQ/T-BASS/E-VR
OUT2 SI SCK OUT1
IN1 IN2
IN-L IN-R
A30 (U) ONLY
A MAIN C.B

BLOCK DIAGRAM – 2 (MAIN: S33<LH>)

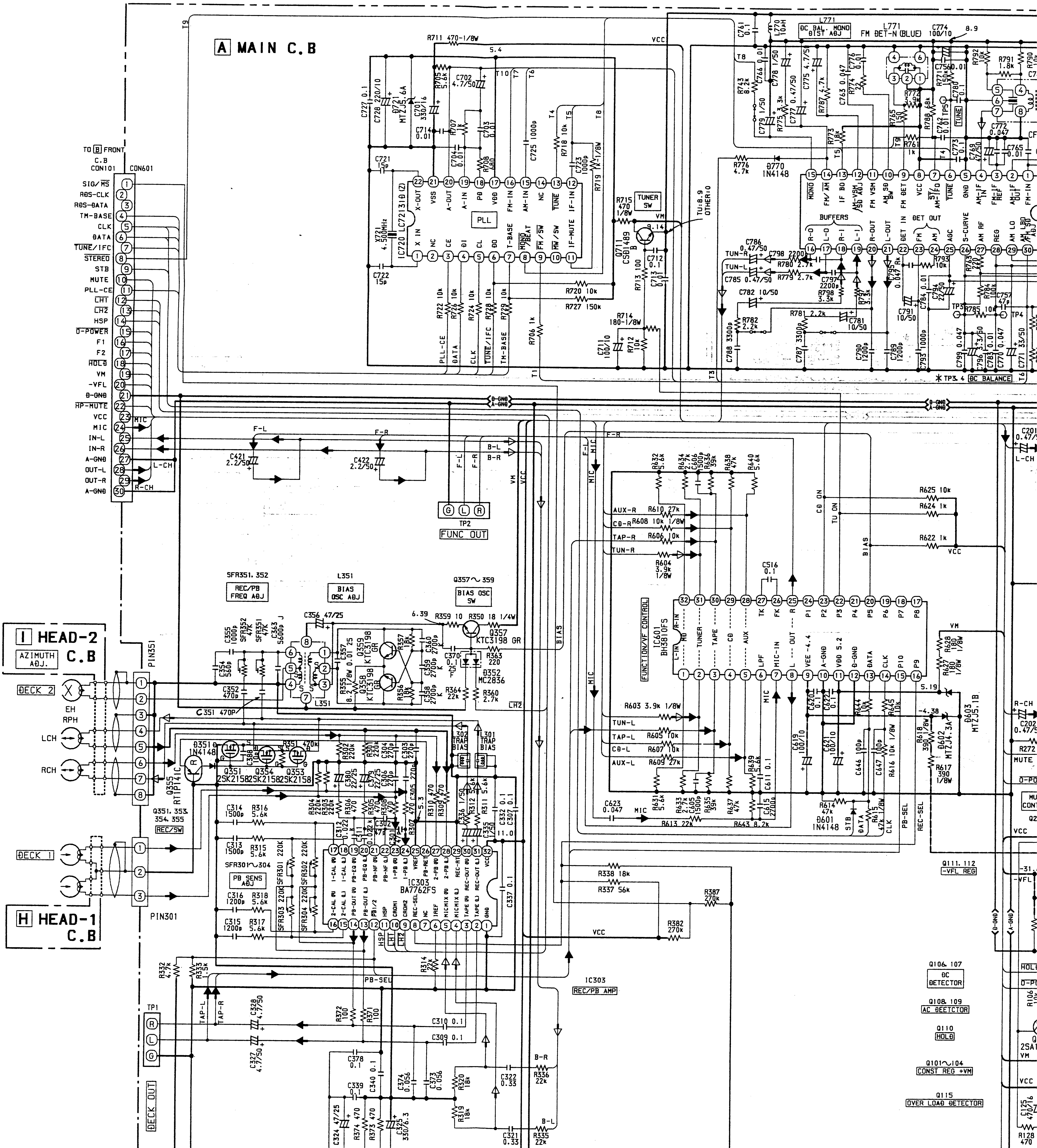


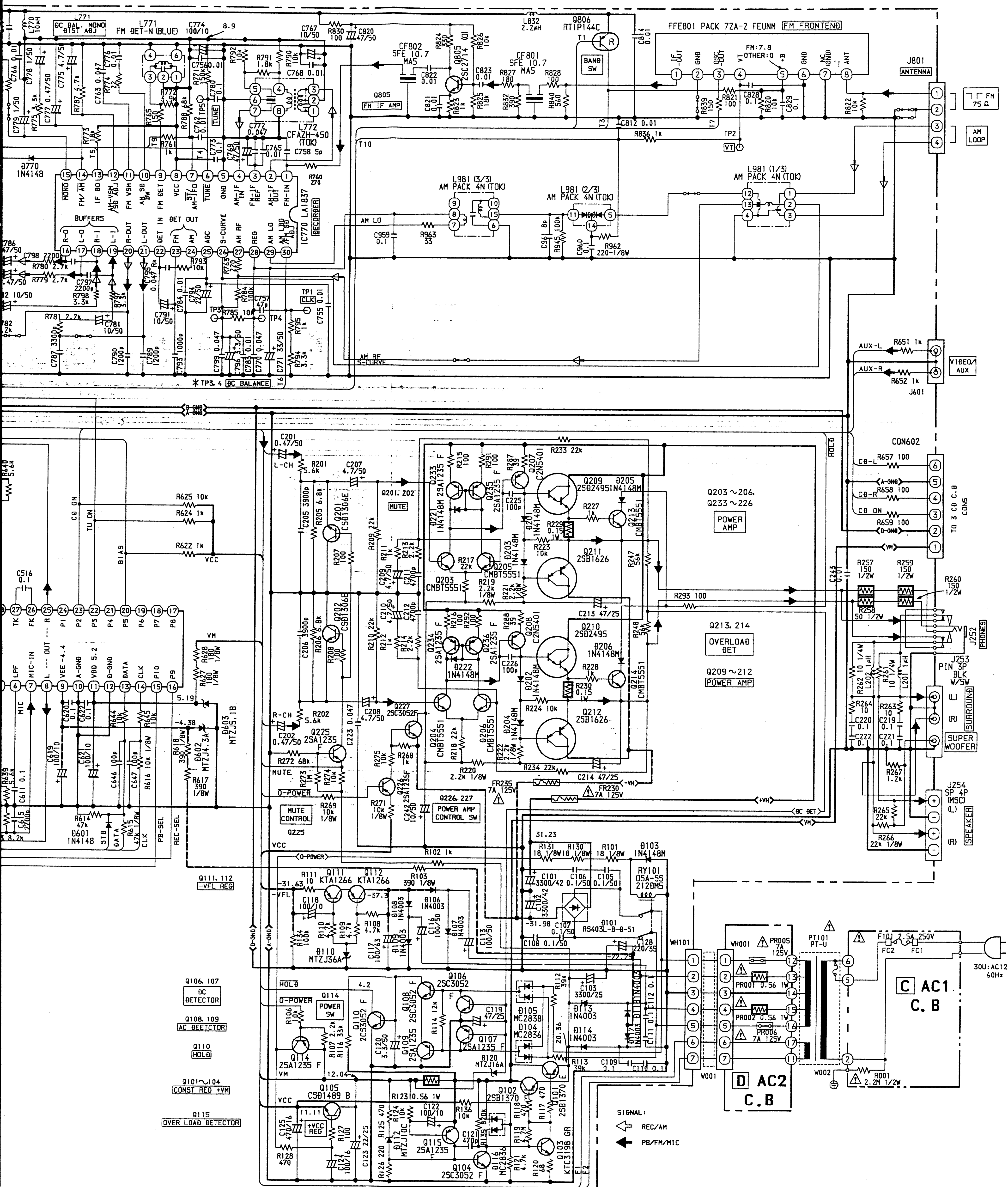
TO 3CD C.B
FL101 DISPLAY
P1~P32 G1~G9
I HEAD-2 C.B
AZIMUTH ADJ.
DECK 2
DECK 1
H HEAD-1 C.B
TUNER BLOCK
(7ZA-2 FEUNM)
SW101 ROTARY ENCODER
CLOCK SHIFT SW Q101
RESET Q102
KEY SW
IC102 REMOTE SENSOR
IC101 LC866548V-5E15 µ-CONTROLLER
MOTOR SW Q104, Q107
SOL1 SW Q106
SOL2 SW Q105
DIODE MATRIX
KEY SCAN SW Q301
VR401 MIC VOL
IC601 NJM4558 MIC AMP
J601 MIC
REC/PB SW Q351, Q353 Q354, Q355
BIAS OSC Q358, Q359
BIAS OSC SW Q357
IC303 BA7762 REC PB AMP
MS LEVEL DET Q381, Q382 Q383
IC601 BH3810FS FUNC./V-F
CON602
TO 3CD C.B
J401 AUX/VIDEO
CON101
CON601
IC380 BA3835
SPECTRUM ANALYZER
IC401 BH3864F GEQ/T-BASS/E-VR
OUT-L OUT-R IN-L IN-R
MUTE SW Q201, Q202 Q225
POWER AMP Q203~212 Q233~236
AMP POWER SW Q226, Q227
SWITCHING Q219
SWITCHING DRIVER Q221 Q222 Q223
SWITCHING Q220
DC DET Q106, Q107
AC DET Q108, Q109
HOLD SW Q110
OVER LOAD DET Q213, Q214
J252 HEADPHONE JACK
L SP OUT
SP OUT R
VCC SW Q105
POWER SW Q114
VM REG. Q101~104 Q115
-VFL REG. Q111, Q112
D101 D102
D AC2 C.B
PT101
H PT C.B
W103
LH:AC120/220~230/240V 50/60Hz
WH101 WH001
B FRONT C.B
A MAIN C.B

WIRING – 1 (MAIN : A30 <U>)

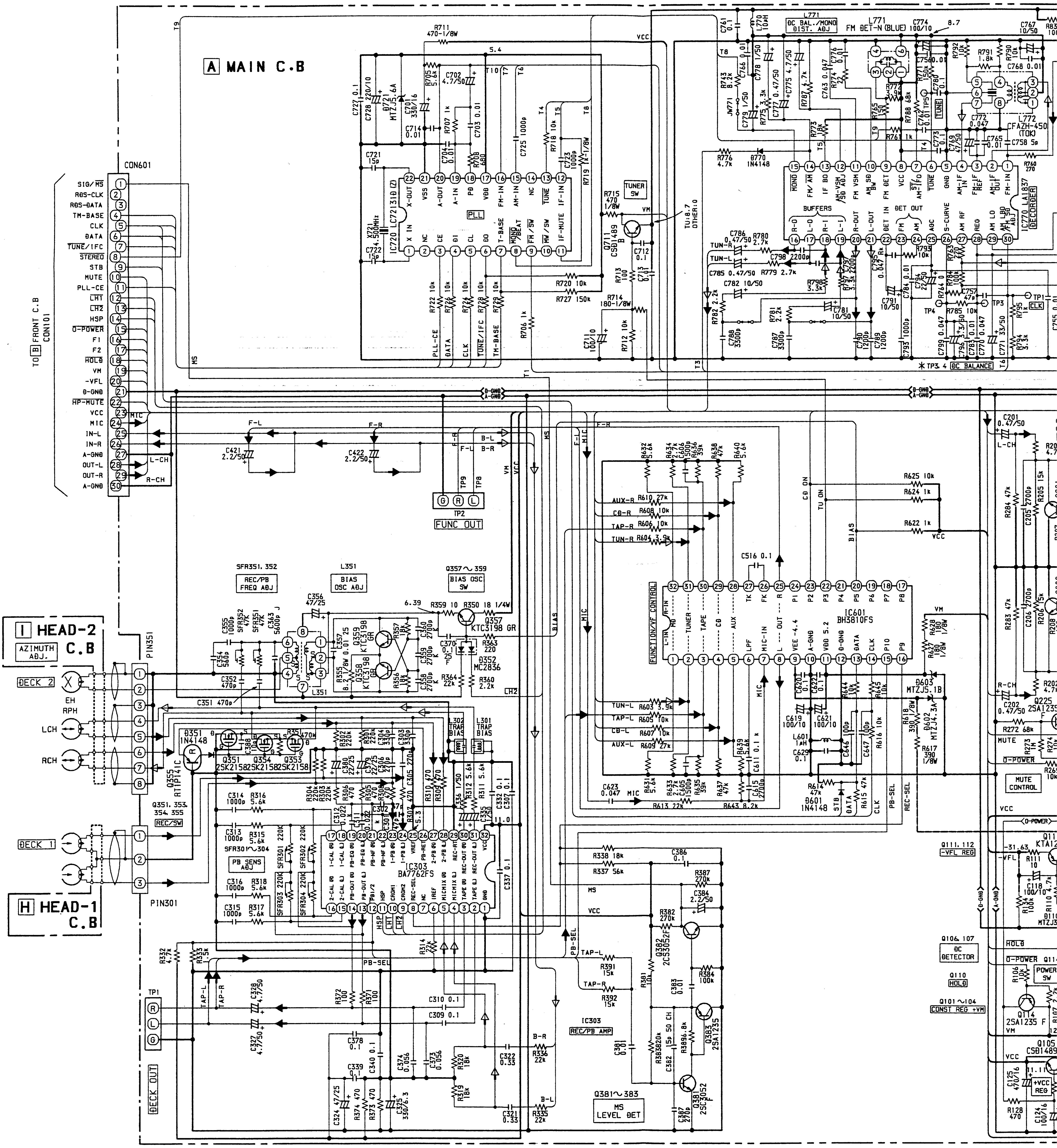

1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
A MAIN C.B
EH
RPH
<BLK>
<WHT>
<RED>
<GRY>
CON351
1 2 3 4 5 6 7 8
TO PIN351
PH
CON301
1 2 3
TO PIN301
TO CON601
TO B FRONT C.B
CON101
AM LOOP
J801
ANTENNA
FM 75Ω
TO 3 CD C.B
CON5
TO CON602
J601
VIDEO
AUX
R
L
FROM D AC2 C.B
WH101
W1
BLK
TO WH101
J253
SURROUND
SPEAKERS
SPEAKERS
IMP : 16Ω+16Ω
J253
SUPER
WOOFER
J254
SPEAKERS
SPEAKER
IMP : 6Ω
J252
PHONES
J801
J601
J253
J254
IC351
IC301
SFR301
SFR302
TP1
TP2
C102
C101
Q101
Q102

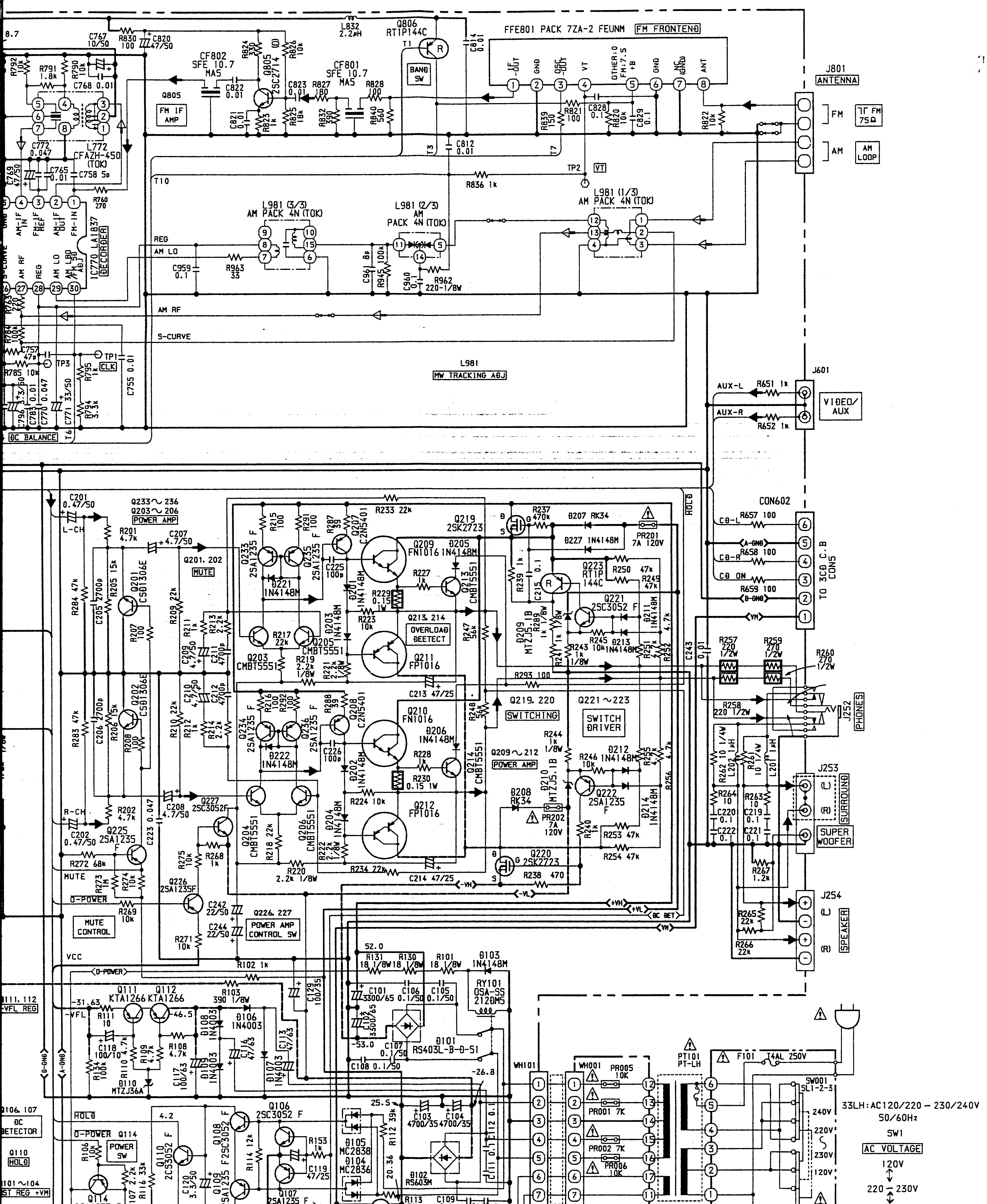
SCHEMATIC DIAGRAM – 1 (MAIN: A30 <U>)

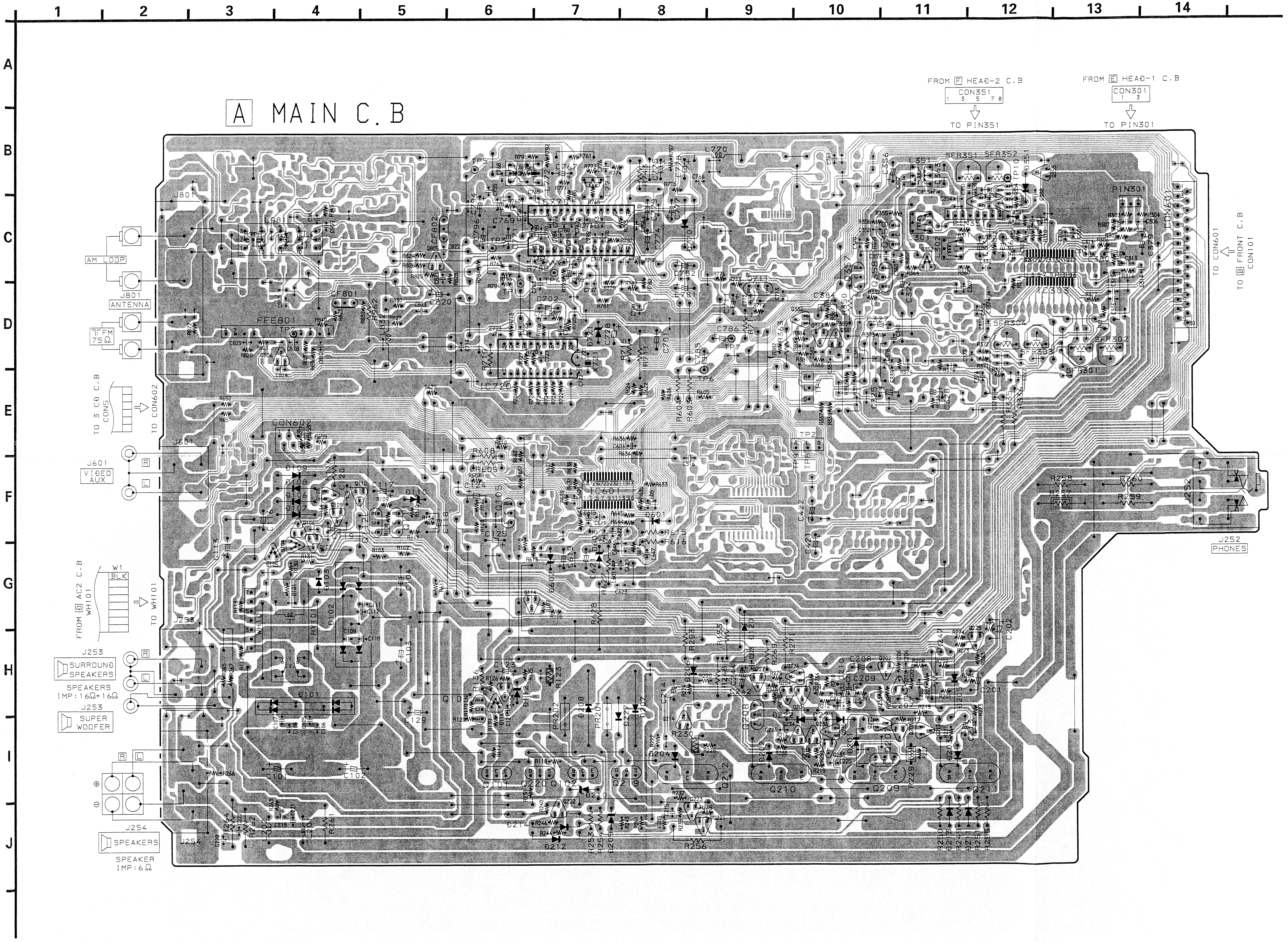

A MAIN C.B
TO B FRONT C.B CON101
CON601
SIG/MS
RDS-CLK
RDS-DATA
TM-BASE
CLK
DATA
TUNE/IFC
STEREO
STB
MUTE
PLL-CE
LH1
LH2
HSP
D-POWER
F1
F2
HOLD
VM
-VFL
D-GND
HP-MUTE
VCC
MIC
IN-L
IN-R
A-GND
OUT-L
OUT-R
A-GND
L-CH
R-CH
IC720 LC72131D (Z)
PLL
X721 4.500MHz
TUNER SW
Q711 CSB1489
L771 DC BAL. MONO DIST ADJ
L771 FM DET-N (BLUE)
BUFFERS
DET OUT
DC BALANCE
TP2
FUNC OUT
F-L
F-R
B-L
B-R
IC601 BH3810FS
FUNCTION/VF CONTROL
SFR351, 352
REC/PB FREQ ADJ
L351
BIAS OSC ADJ
Q357~359
BIAS OSC SW
I HEAD-2 C.B
AZIMUTH ADJ.
DECK 2
EH
RPH
LCH
RCH
PIN351
Q351, 353, 354, 355
REC/SW
SFR301~304
PB SENS ADJ
IC303 BA7762FS
IC303
REC/PB AMP
DECK 1
H HEAD-1 C.B
PIN301
TP1
DECK OUT
TAP-L
TAP-R
PB-SEL
REC-SEL
Q111, 112
-VFL REG
Q106, 107
DC DETECTOR
Q108, 109
AC DETECTOR
Q110
HOLD
Q101~104
CONST REG +VM
Q115
OVER LOAD DETECTOR


FFE801 PACK 7ZA-2 FEUNM
FM FRONTEND
J801
ANTENNA
FM 75 Ω
AM LOOP
Q806 RT1P144C
BAND SW
CF802 SFE 10.7 MA5
CF801 SFE 10.7 MA5
Q805 2SC2714
Q805 FM IF AMP
L771 FM DET-N (BLUE)
L771 DC BAL. MONO DIST ADJ
L772 CFAZH-450 (TOK)
IC770 LA1837 DECORDER
BUFFERS
DET OUT
L981 (3/3) AM PACK 4N (TOK)
L981 (2/3) AM PACK 4N (TOK)
L981 (1/3) AM PACK 4N (TOK)
AM LO
AM RF
S-CURVE
TP1 CLK
TP2 VT
TP3, 4 DC BALANCE
D770 1N4148
VIDEO/AUX
AUX-L
AUX-R
J601
CON602
TO 3 CD C.B CON5
CD-L
CD-R
CD ON
A-GND
D-GND
VM
HOLD
Q203~206, Q233~226 POWER AMP
Q213, 214 OVERLOAD DET
Q209~212 POWER AMP
Q201, 202 MUTE
Q209 2SD2495
Q210 2SD2495
Q211 2SB1626
Q212 2SB1626
Q207 C2N5401
Q208 C2N5401
Q213 CMBT5551
Q214 CMBT5551
Q225 2SA1235
Q226, 227 POWER AMP CONTROL SW
Q227 2SC3052F
MUTE CONTROL
L-CH
R-CH
FR235 7A 125V
FR230 7A 125V
J252 PHONES
J253 PIN 3P BLK W/SW
SURROUND
SUPER WOOFER
J254 SP 4P (MSC)
SPEAKER
Q111, 112 -VFL REG
Q111 KTA1266
Q112 KTA1266
D110 MTZJ36A
Q106, 107 DC DETECTOR
Q108, 109 AC DEETCTOR
Q110 HOLD
Q101~104 CONST REG +VM
Q115 OVER LOAD DETECTOR
Q114 POWER SW
Q114 2SA1235 F
Q106 2SC3052
Q107 2SA1235 F
Q105 CSB1489 B
Q102 2SB1370
Q101 2SB1370
Q103 KTC3198 GR
Q104 2SC3052 F
Q115 2SA1235
+VCC REG
RY101 OSA-SS 212BM5
D101 RS403L-B-D-S1
D103 1N4148M
D105 MC2838
D104 MC2836
D113 1N4003
D114 1N4003
D120 MTZJ16A
WH101
WH001
W001
W002
PT101 PT-U
PR001 0.56 1W
PR002 0.56 1W
PR005 7A 125V
PR006 7A 125V
F101 2.5A 250V
FC1
FC2
R001 2.2M 1/2W
30U:AC120V 60Hz
C AC1 C.B
D AC2 C.B
SIGNAL:
REC/AM
PB/FM/MIC

SCHEMATIC DIAGRAM – 2 (MAIN: S33 <LH>)


A MAIN C.B
CON601
TO B FRONT C.B CON101
SIG/HS
RDS-CLK
RDS-DATA
TM-BASE
CLK
DATA
TUNE/IFC
STEREO
STB
MUTE
PLL-CE
LHT
LH2
HSP
D-POWER
F1
F2
HOLD
VM
-VFL
D-GND
HP-MUTE
VCC
MIC
IN-L
IN-R
A-GND
OUT-L
OUT-R
A-GND
IC720 LC72131D (Z)
PLL
X721 4.500MHz
Q711 CSD1489
TUNER SW
TU:8.7 OTHER:0
L771 DC BAL./MONO DIST. ADJ
L771 FM DET-N (BLUE)
IC770 LA1837 DECORDER
L772 CFAZH-450 (TOK)
*TP3, 4 DC BALANCE
BUFFERS
DET OUT
TP2 FUNC OUT
IC601 BH3810FS
FUNCTION/VF CONTROL
SFR351, 352 REC/PB FREQ ADJ
L351 BIAS OSC ADJ
Q357~359 BIAS OSC SW
Q357 KTC3198 GR
Q358 KTC3198 GR
Q359 KTC3198 GR
D352 MC2836
I HEAD-2 AZIMUTH ADJ. C.B
DECK 2
EH
RPH
LCH
RCH
PIN351
D351 1N4148
Q351 2SK2158
Q354 2SK2158
Q353 2SK2158
Q355 RT1P141C
Q351, 353, 354, 355 REC/SW
L302 TRAP BIAS
L301 TRAP BIAS
IC303 BA7762FS
SFR301~304 PB SENS ADJ
DECK 1
H HEAD-1 C.B
PIN301
TP1
DECK OUT
IC303 REC/PB AMP
Q381~383 MS LEVEL DET
Q381 2SC3052 F
Q382 2SC3052F
Q383 2SA1235
D601 1N4148
D602 MTZJ4.3A
D603 MTZJ5.1B
Q225 2SA1235
MUTE CONTROL
Q111, 112 -VFL REG
Q106, 107 DC DETECTOR
Q110 HOLD
Q101~104 CONST REG +VM
Q114 2SA1235 F
Q105 CSD1489
+VCC REG
POWER SW


FFE801 PACK 7ZA-2 FEUNM
FM FRONTEND
J801
ANTENNA
FM
75Ω
AM
AM LOOP
CF802 SFE 10.7 MAS
CF801 SFE 10.7 MAS
Q805
FM IF AMP
Q805 2SC2714 (O)
Q806 RT1P144C
BAND SW
L832 2.2μH
L772 CFAZH-450 (TOK)
IC770 LA1837
DECORDER
L981 (3/3) AM PACK 4N (TOK)
L981 (2/3) AM PACK 4N (TOK)
L981 (1/3) AM PACK 4N (TOK)
L981
MW TRACKING ADJ
TP1
CLK
TP2
VT
TP3
DC BALANCE
REG
AM LO
AM RF
S-CURVE
J601
AUX-L
AUX-R
VIDEO/ AUX
CON602
CD-L
CD-R
CD ON
TO 3CD C.B CON5
Q233～236
Q203～206
POWER AMP
Q201, 202
MUTE
Q213, 214
OVERLOAD DETECT
Q219, 220
SWITCHING
Q221～223
SWITCH DRIVER
Q209～212
POWER AMP
Q219 2SK2723
Q220 2SK2723
Q209 FN1016
Q210 FN1016
Q211 FP1016
Q212 FP1016
PR201 7A 120V
PR202 7A 120V
J252
PHONES
J253
SURROUND
SUPER WOOFER
J254
SPEAKER
L-CH
R-CH
MUTE
D-POWER
MUTE CONTROL
Q226, 227
POWER AMP CONTROL SW
VCC
Q111, 112
+VFL REG
Q111 KTA1266
Q112 KTA1266
Q106, 107
DC DETECTOR
Q110
HOLD
Q101～104
+ST REG +VM
Q114
POWER SW
Q105 CSD1489 B
+VCC REG
RY101 OSA-SS 212DM5
D101 RS403L-B-D-S1
D102 RS603M
WH101
W001
WH001
PR005 10K
PR001 7K
PR002 7K
PR006 10K
D AC2 C.B
PT101 PT-LH
F101 T4AL 250V
SW001 SL1-2-3
H PT C.B
33LH:AC120/220 - 230/240V
50/60Hz
SW1
AC VOLTAGE
120V
220 ↔ 230V
240V
SIGNAL:
REC/AM
PB/FM/MIC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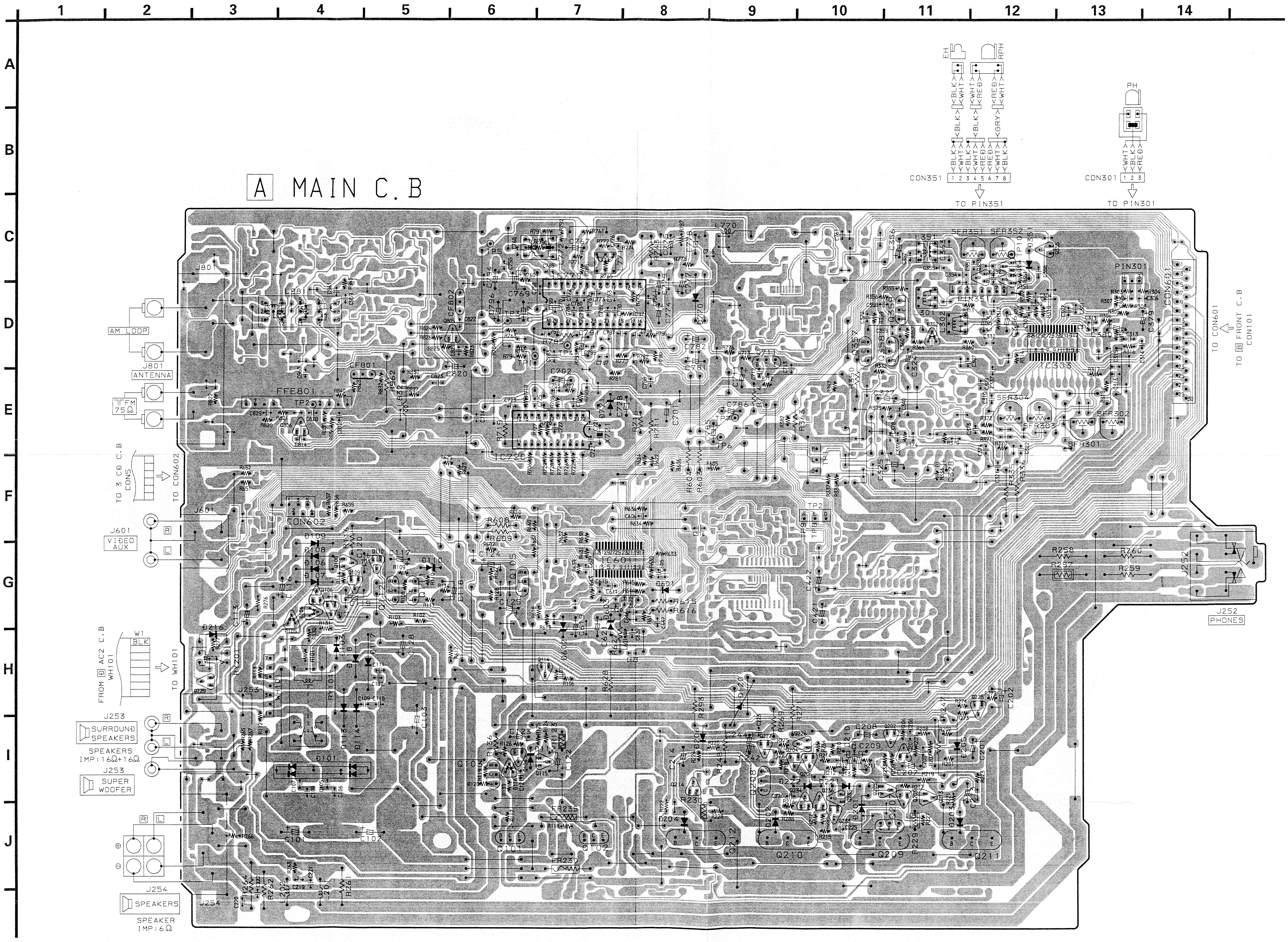
12
13
14
A
B
C
D
E
F
G
H
I
J
A MAIN C.B
FROM F HEAD-2 C.B
CON351
1 3 5 7 8
TO PIN351
FROM E HEAD-1 C.B
CON301
1 3
TO PIN301
TO CON601
TO B FRONT C.B
CON101
AM LOOP
J801
ANTENNA
FM 75Ω
TO 3 CD C.B
CON5
TO CON602
J601
VIDEO
AUX
R
L
FROM D AC2 C.B
WH101
W1
BLK
TO WH101
J253
SURROUND
SPEAKERS
SPEAKERS
IMP: 16Ω+16Ω
J253
SUPER
WOOFER
⊕
⊖
J254
SPEAKERS
SPEAKER
IMP: 6Ω
J252
PHONES
IC601
IC303
IC720
IC770
L770
CON602
CON601
PIN301
CF801
CF802
FFE801
L981
RY101
D101
Q210
Q209
Q211
Q201
Q202
Q212
Q208
PR201
PR202
SFR351
SFR352
SFR301
SFR302
SFR303
SFR304
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
R258
R259
R260
R257
R256


1
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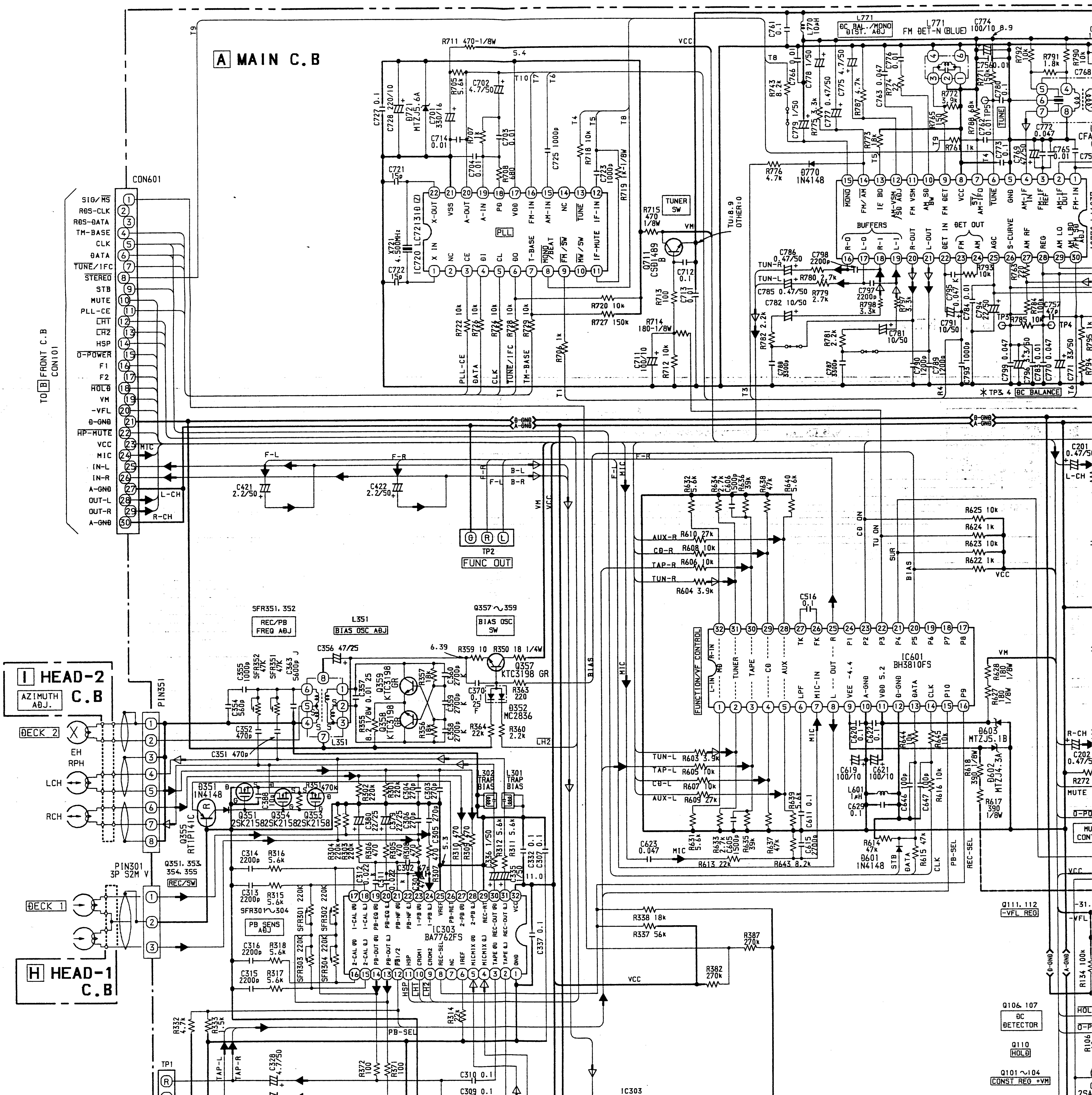
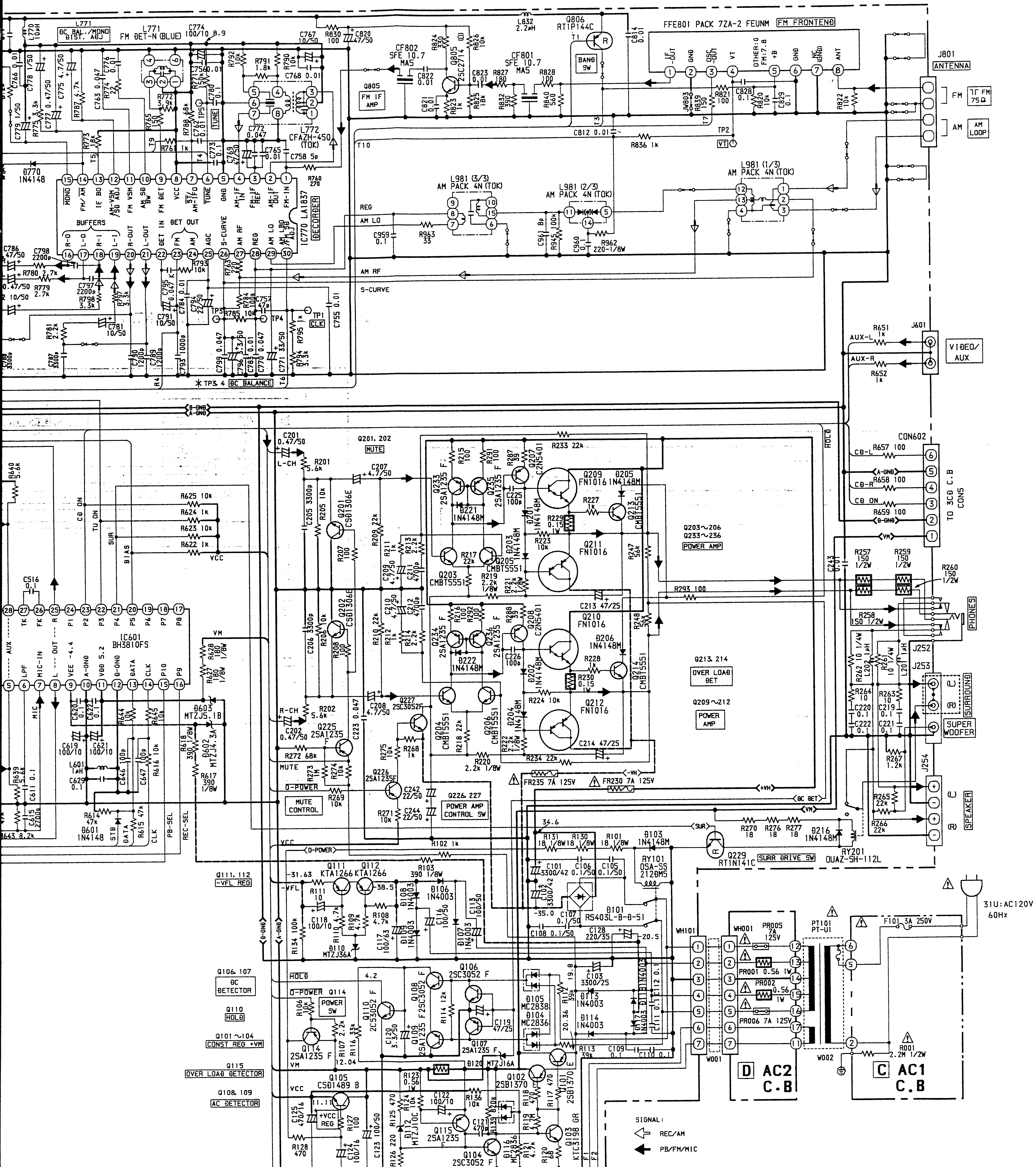
11
12
13
14
A
B
C
D
E
F
G
H
I
J
A MAIN C.B
EH
RPH
<BLK> <WHT>
<BLK> <WHT> <BLK> <RED>
<WHT> <RED> <RED> <WHT>
<BLK> <WHT> <BLK> <WHT> <RED> <GRY> <WHT> <BLK>
CON351 1 2 3 4 5 6 7 8
TO PIN351
PH
<WHT> <BLK> <RED>
CON301 1 2 3
TO PIN301
PIN301
CON601
TO CON601
TO B FRONT C.B CON101
J801
AM LOOP
J801
ANTENNA
FM 75Ω
FFE801
CF801
CF802
TO 3 CD C.B CON5
TO CON602
CON602
J601
R
L
J601
VIDEO AUX
IC601
IC720
IC303
SFR351
SFR352
SFR304
SFR303
SFR302
SFR301
L770
R258
R260
R259
R257
J252
J252
PHONES
FROM E AC2 C.B WH101
W1
BLK
TO WH101
J253
SURROUND SPEAKERS
SPEAKERS IMP: 16Ω+16Ω
J253
SUPER WOOFER
⊕
⊖
J254
SPEAKERS
SPEAKER IMP: 6Ω
J254
D101
Q101
Q102
FR235
FR230
Q210
Q209
Q211
Q212

SCHEMATIC DIAGRAM – 3 (MAIN: A31 <U>)

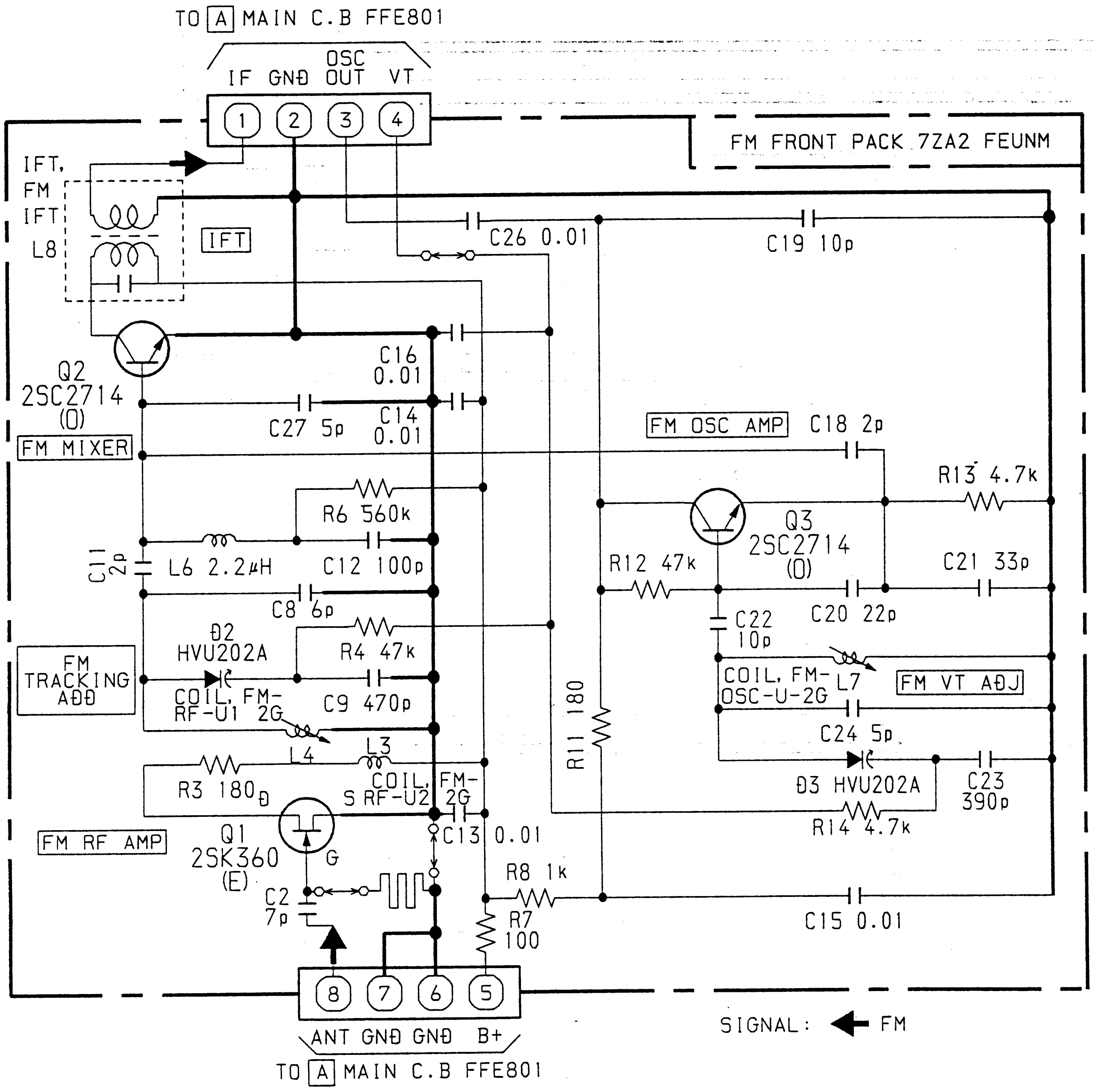


A MAIN C.B
CON601
TO B FRONT C.B CON101
SIG/MS
RDS-CLK
RDS-DATA
TM-BASE
CLK
DATA
TUNE/IFC
STEREO
STB
MUTE
PLL-CE
LHT
LH2
HSP
D-POWER
F1
F2
HOLD
VM
-VFL
D-GND
HP-MUTE
VCC
MIC
IN-L
IN-R
A-GND
OUT-L
OUT-R
A-GND
IC720 LC72131D (Z)
PLL
X721 4.500MHz
TUNER SW
Q711 CSD1489 B
TU:8.9 OTHER:0
L771 FM DET-N (BLUE)
DC BAL./MONO DIST. ADJ
BUFFERS
DET OUT
TP3, 4 DC BALANCE
F-L
F-R
B-L
B-R
C421 2.2/50
C422 2.2/50
TP2
FUNC OUT
SFR351, 352
REC/PB FREQ ADJ
L351
BIAS OSC ADJ
Q357~359
BIAS OSC SW
IC601 BH3810FS
FUNCTION/VF CONTROL
I HEAD-2
AZIMUTH ADJ.
C.B
DECK 2
EH
RPH
LCH
RCH
PIN351
PIN301 3P S2M V
Q351, 353, 354, 355
REC/SW
DECK 1
H HEAD-1 C.B
Q351 2SK2158
Q354 2SK2158
Q353 2SK2158
Q355 RT1P141C
Q352 MC2836
Q357 KTC3198 GR
Q358 KTC3198 GR
Q359 KTC3198 GR
D351 1N4148
L302 TRAP BIAS
L301 TRAP BIAS
SFR301~304
PB SENS ADJ
IC303 BA7762FS
IC303
REC/PB AMP
TP1
DECK OUT
PB-SEL
TAP-L
TAP-R
Q111, 112
-VFL REG
Q106, 107
DC DETECTOR
Q110
HOLD
Q101~104
CONST REG +VM
Q115
OVER LOAD DETECTOR
Q108, 109
AC DETECTOR
D601 1N4148
D602 MTZJ4.3A
D603 MTZJ5.1B
D770 1N4148
D721 MTZJ5.6A
VCC
VM
BIAS
MIC

MC-Service

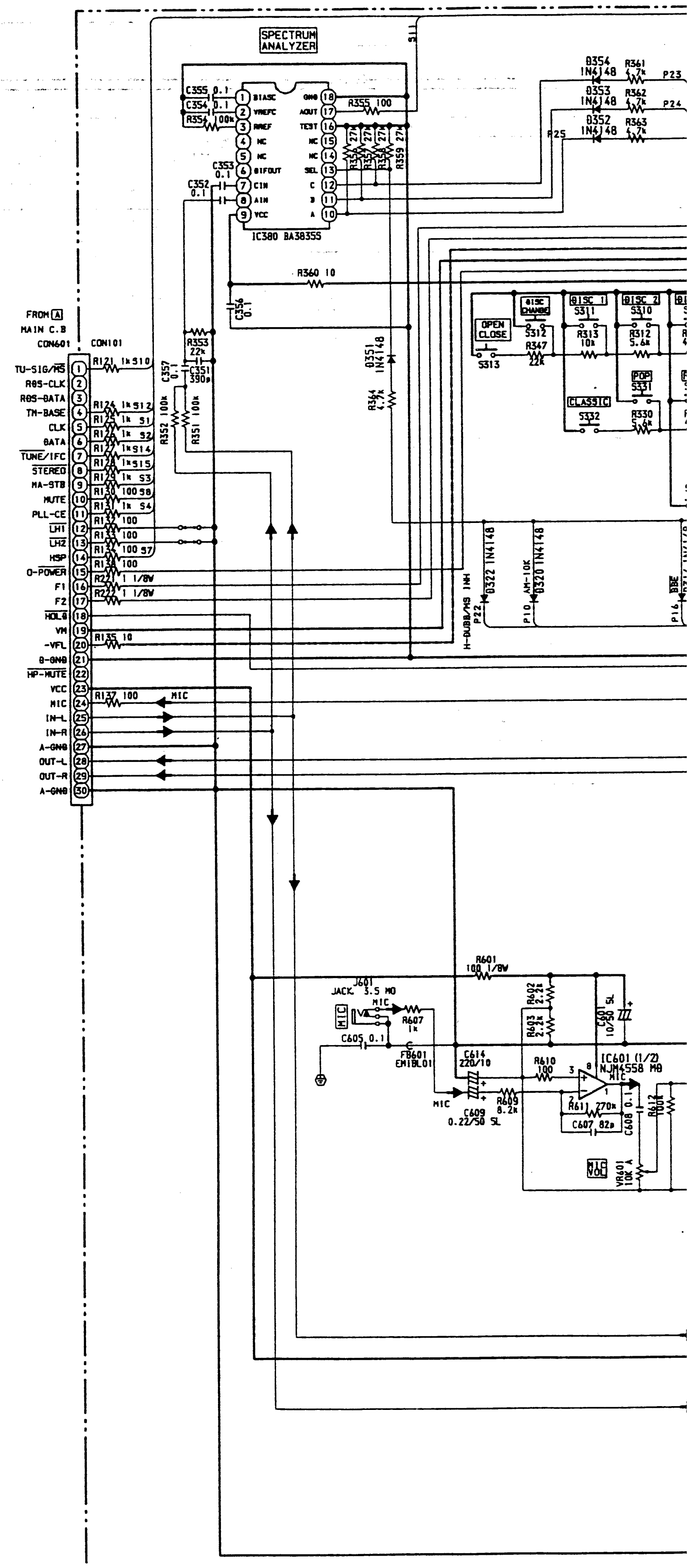

FFE801 PACK 7ZA-2 FEUNM
FM FRONTEND
J801
ANTENNA
FM
75Ω
AM
AM LOOP
CF802 SFE 10.7 MA5
CF801 SFE 10.7 MA5
Q806 RT1P144C
BAND SW
Q805
FM IF AMP
L771 FM DET-N (BLUE)
L772 CFAZH-450 (TOK)
DC BAL./MONO DIST. ADJ
TUNE
IC770 LA1837
DECORDER
L981 (3/3) AM PACK 4N (TOK)
L981 (2/3) AM PACK 4N (TOK)
L981 (1/3) AM PACK 4N (TOK)
BUFFERS
DET OUT
AM RF
S-CURVE
REG
AM LO
*TP3, 4 DC BALANCE
J601
VIDEO/AUX
AUX-L
AUX-R
CON602
TO 3CD C.B CON5
CD-L
CD-R
CD ON
IC601 BH3810FS
Q201, 202 MUTE
Q203~206 Q233~236 POWER AMP
Q213, 214 OVER LOAD DET
Q209~212 POWER AMP
MUTE CONTROL
Q226, 227 POWER AMP CONTROL SW
PHONES
J252
J253
SURROUND
SUPER WOOFER
J254
SPEAKER
Q229 RT1N141C
SURR DRIVE SW
RY201 OUAZ-SH-112L
RY101 OSA-SS 212DM5
Q111, 112 -VFL REG
Q106, 107 DC DETECTOR
Q110 HOLD
Q101~104 CONST REG +VM
Q115 OVER LOAD DETECTOR
Q108, 109 AC DETECTOR
Q114 POWER SW
WH001
PR005 7A 125V
PR001 0.56 1W
PR002 0.56 1W
PR006 7A 125V
PT101 PT-U1
D AC2 C.B
C AC1 C.B
F101 3A 250V
31U:AC120V 60Hz
R001 2.2M 1/2W
SIGNAL:
REC/AM
PB/FM/MIC

SCHEMATIC DIAGRAM – 4 (TUNER PACK: 7ZA2)



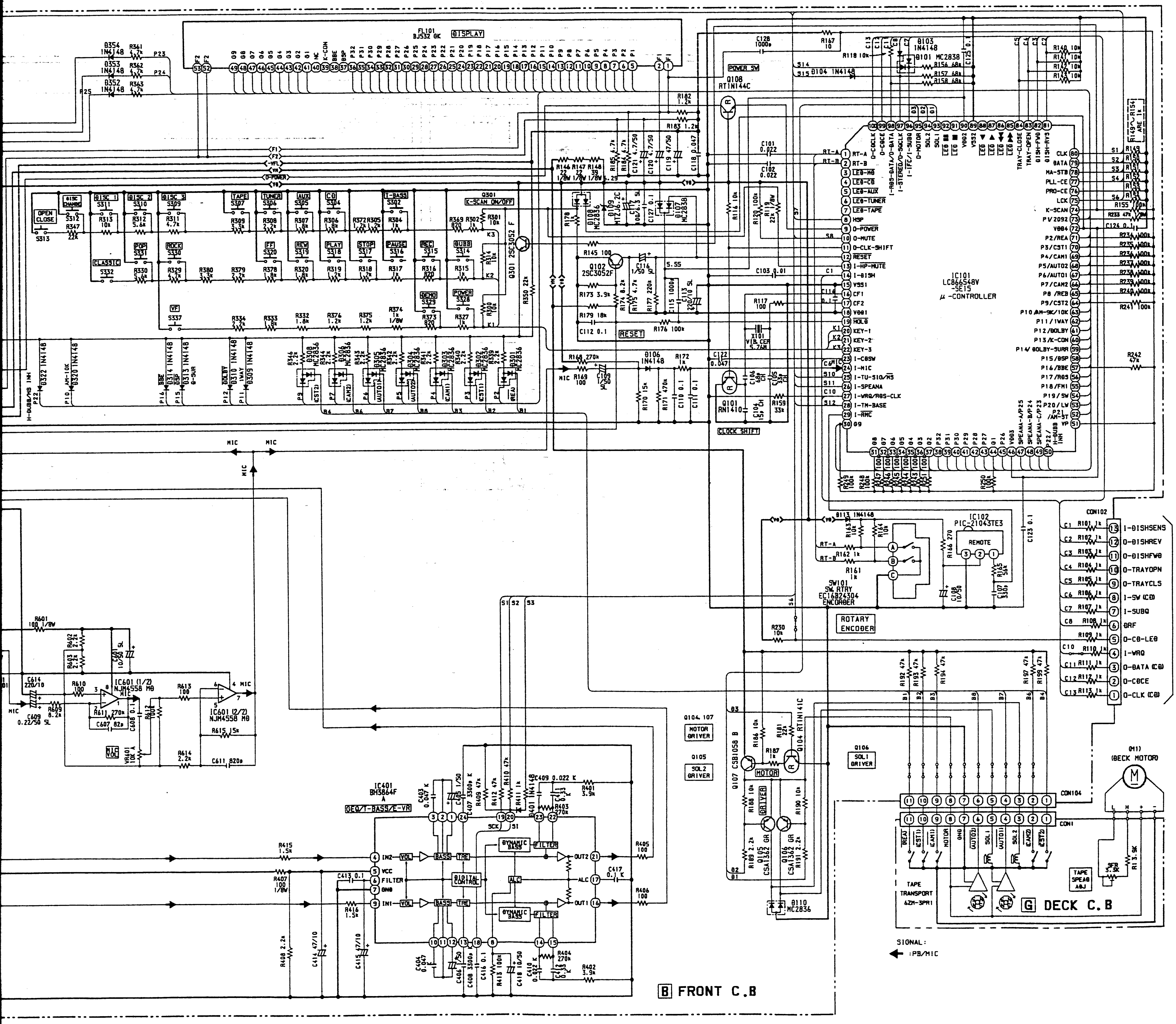
TO A MAIN C.B FFE801
IF GND OSC OUT VT
1 2 3 4
FM FRONT PACK 7ZA2 FEUNM
IFT, FM IFT L8
IFT
C26 0.01
C19 10p
Q2 2SC2714 (O)
FM MIXER
C16 0.01
C27 5p
C14 0.01
FM OSC AMP
C18 2p
R13 4.7k
R6 560k
Q3 2SC2714 (O)
C11 2p
L6 2.2μH
C12 100p
R12 47k
C21 33p
C8 6p
C22 10p
C20 22p
D2 HVU202A
R4 47k
FM TRACKING ADJ
COIL, FM-RF-U1 2G
C9 470p
R11 180
COIL, FM-OSC-U-2G L7
FM VT ADJ
C24 5p
L4
L3
R3 180
COIL, FM-S RF-U2 2G
D3 HVU202A
C23 390p
R14 4.7k
FM RF AMP
Q1 2SK360 (E)
G
S
D
C13 0.01
R8 1k
C2 7p
R7 100
C15 0.01
8 7 6 5
ANT GND GND B+
TO A MAIN C.B FFE801
SIGNAL: FM

SCHEMATIC DIAGRAM – 5 (FRONT: A30 <U>)

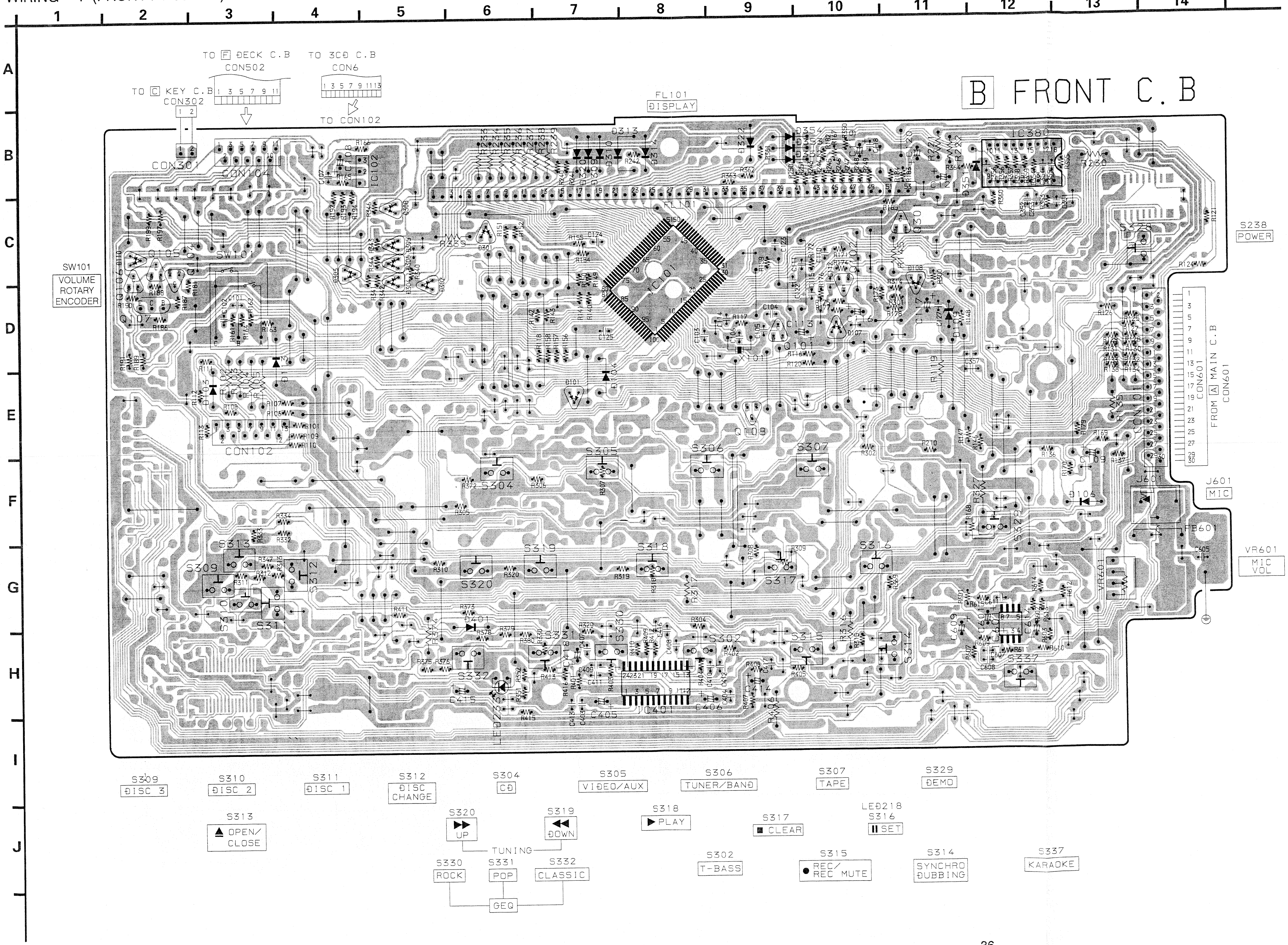


SPECTRUM ANALYZER
IC380 BA3835S
BIASC VREFC RREF NC NC BIFOUT CIN AIN VCC
GND AOUT TEST NC NC SEL C B A
C355 0.1
C354 0.1
R354 100k
R355 100
C353 0.1
C352 0.1
R356 R357 R358 R359 27k
R360 10
C356 0.1
D354 1N4148 R361 4.7k P23
D353 1N4148 R362 4.7k P24
D352 1N4148 R363 4.7k P25
S11
FROM A MAIN C.B CON601
CON101
TU-SIG/MS
RDS-CLK
RDS-DATA
TM-BASE
CLK
DATA
TUNE/IFC
STEREO
MA-STB
MUTE
PLL-CE
LH1
LH2
HSP
O-POWER
F1
F2
HOLD
VM
-VFL
D-GND
HP-MUTE
VCC
MIC
IN-L
IN-R
A-GND
OUT-L
OUT-R
A-GND
R121 1k S10
R124 1k S12
R125 1k S1
R126 1k S2
R127 1k S14
R128 1k S15
R129 1k S3
R130 100 S8
R131 1k S4
R132 100
R133 100
R134 100 S7
R136 100
R221 1 1/8W
R222 1 1/8W
R135 10
R137 100
MIC
R353 22k
C357 0.1
C351 390p
R352 100k
R351 100k
D351 1N4148
R364 4.7k
OPEN CLOSE S313
DISC CHANGE S312
R347 22k
DISC 1 S311
R313 10k
DISC 2 S310
R312 5.6k
POP S331
CLASSIC S332
R330 5.6k
H-DUBB/MS INH P22
D322 1N4148
AM-10K P10
D320 1N4148
BBE P16
R601 100 1/8W
J601 JACK 3.5 MO
MIC
R607 1k
C605 0.1
FB601 EMI8L01
C614 220/10
MIC
R610 100
C609 0.22/50 SL
R609 8.2k
R611 270k
C607 82p
IC601 (1/2) NJM4558 MO
R602 2.2k
R603 2.2k
C601 10/50 SL
C608 0.1
MIC VOL
VR601 10K A
R612

NT: A30 <U>)

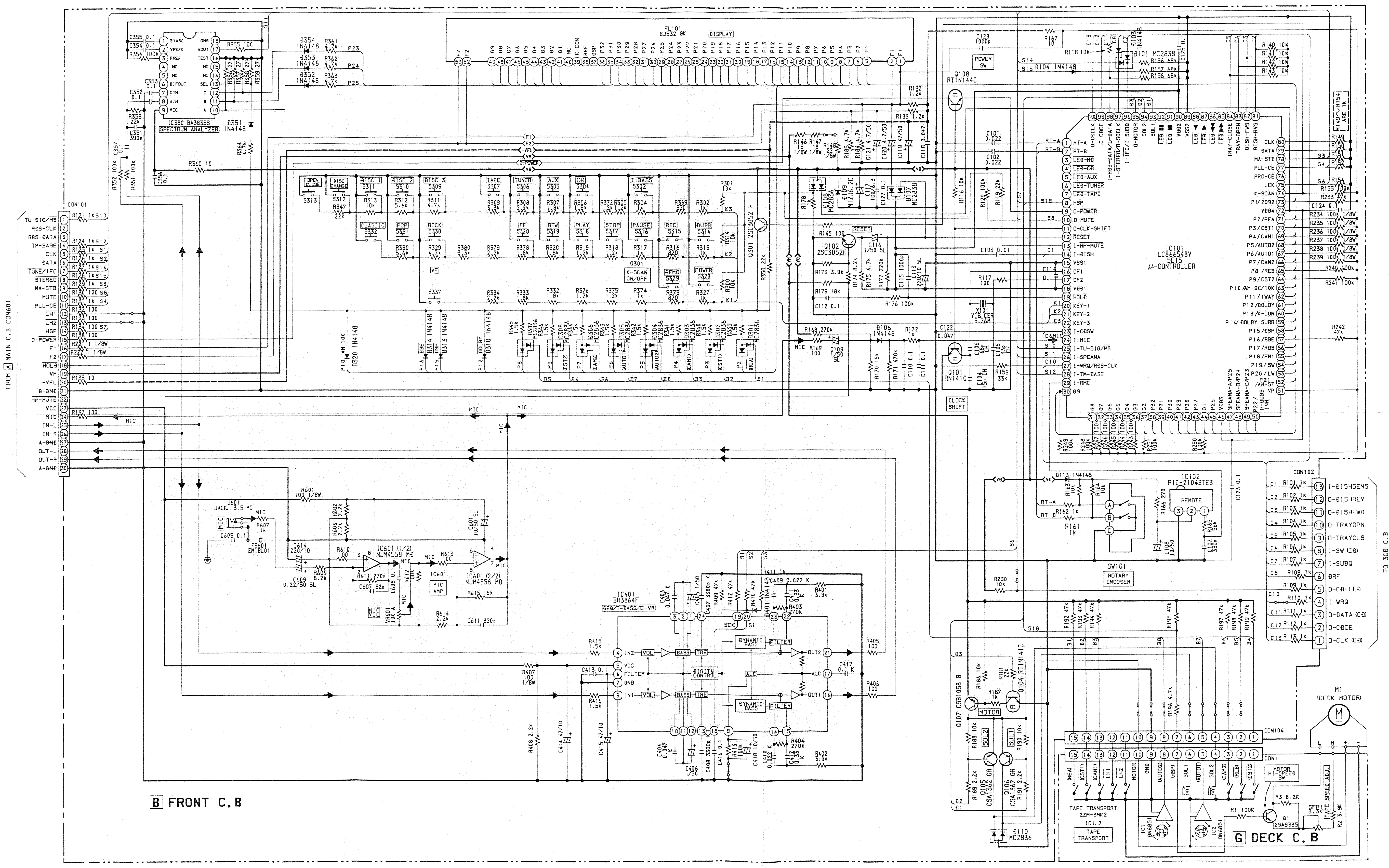

FL101 BJ532GK DISPLAY
IC101 LC866548V -5E15 µ-CONTROLLER
IC102 PIC-21043TE3
REMOTE
SW101 SW. RTRY EC16B24304 ENCODER
ROTARY ENCODER
POWER SW
RESET
CLOCK SHIFT
K-SCAN ON/OFF
OPEN CLOSE
CLASSIC
POP
ROCK
TAPE
TUNER
AUX
CD
T-BASS
PLAY
STOP
PAUSE
REC
DUBB
POWER
DEMO
VF
IC401 BH3864F
GEQ/T-BASS/E-VR
VOL
BASS
TRE
DYNAMIC BASS
FILTER
DIGITAL CONTROL
ALC
IC601 (1/2) NJM4558 M8
IC601 (2/2) NJM4558 M8
MIC
MIC VOL
Q104, 107 MOTOR DRIVER
Q105 SOL2 DRIVER
Q106 SOL1 DRIVER
MOTOR
DRIVER
CON102
TO 3CD C.B CON6
CON104
CON1
(M1) (DECK MOTOR)
TAPE TRANSPORT 6ZM-3PR1
TAPE SPEAD ADJ
B FRONT C.B
G DECK C.B
SIGNAL: PB/MIC

WIRING – 4 (FRONT : A30 <U>)

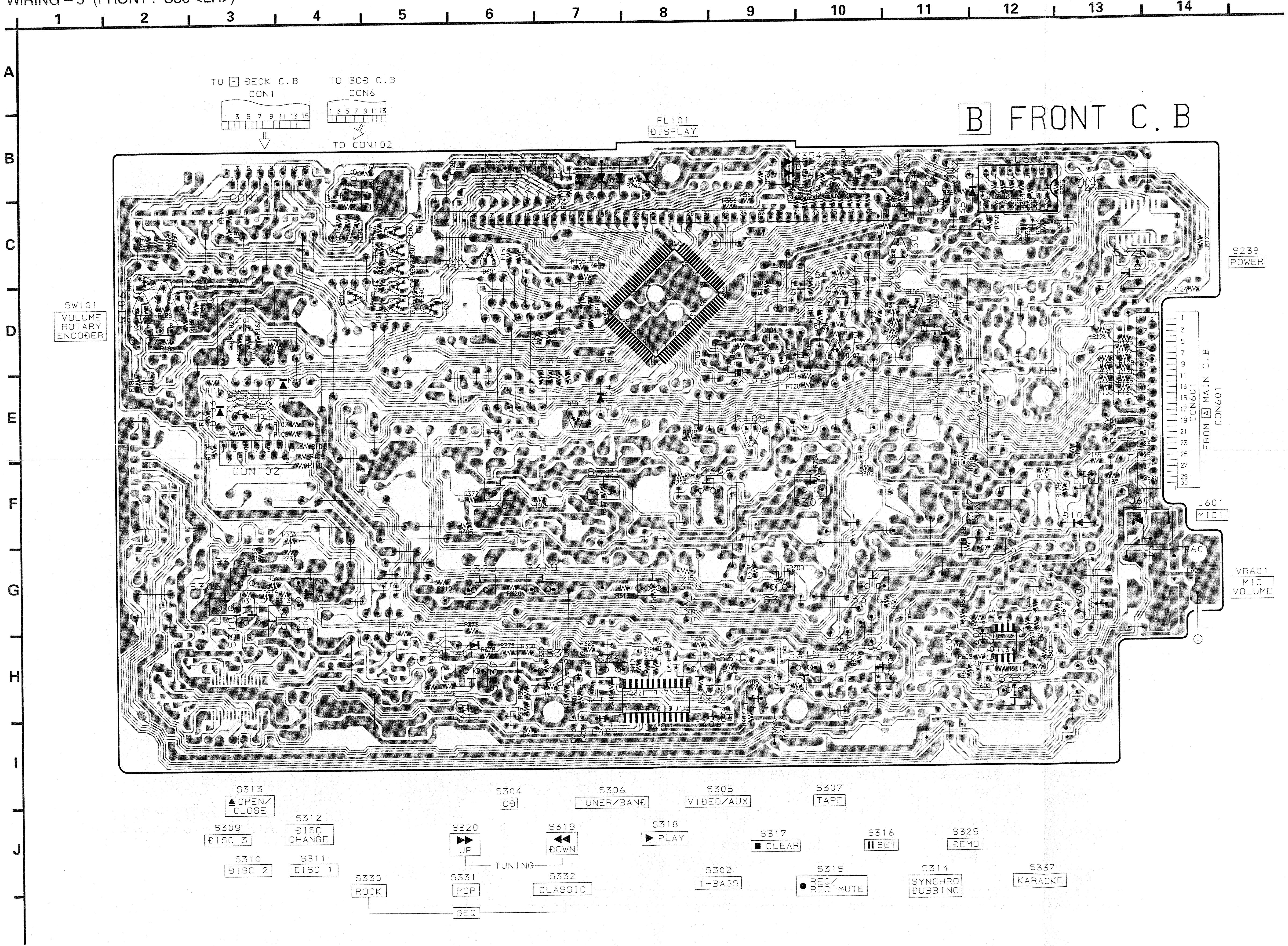


B FRONT C. B
TO F DECK C.B CON502
TO 3CD C.B CON6
TO CON102
TO C KEY C.B CON302
CON301
CON104
FL101 DISPLAY
IC101
IC102
IC380
IC401
SW101 VOLUME ROTARY ENCODER
S238 POWER
FROM A MAIN C.B CON601
CON101
J601 MIC
VR601 MIC VOL
FB601
CON102
S309 DISC 3
S310 DISC 2
S311 DISC 1
S312 DISC CHANGE
S304 CD
S305 VIDEO/AUX
S306 TUNER/BAND
S307 TAPE
S329 DEMO
S313 ▲ OPEN/ CLOSE
S320 ▶▶ UP
S319 ◀◀ DOWN
TUNING
S318 ▶ PLAY
S317 ■ CLEAR
LED218
S316 II SET
S330 ROCK
S331 POP
S332 CLASSIC
GEQ
S302 T-BASS
S315 ● REC/ REC MUTE
S314 SYNCHRO DUBBING
S337 KARAOKE
LED235
1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J

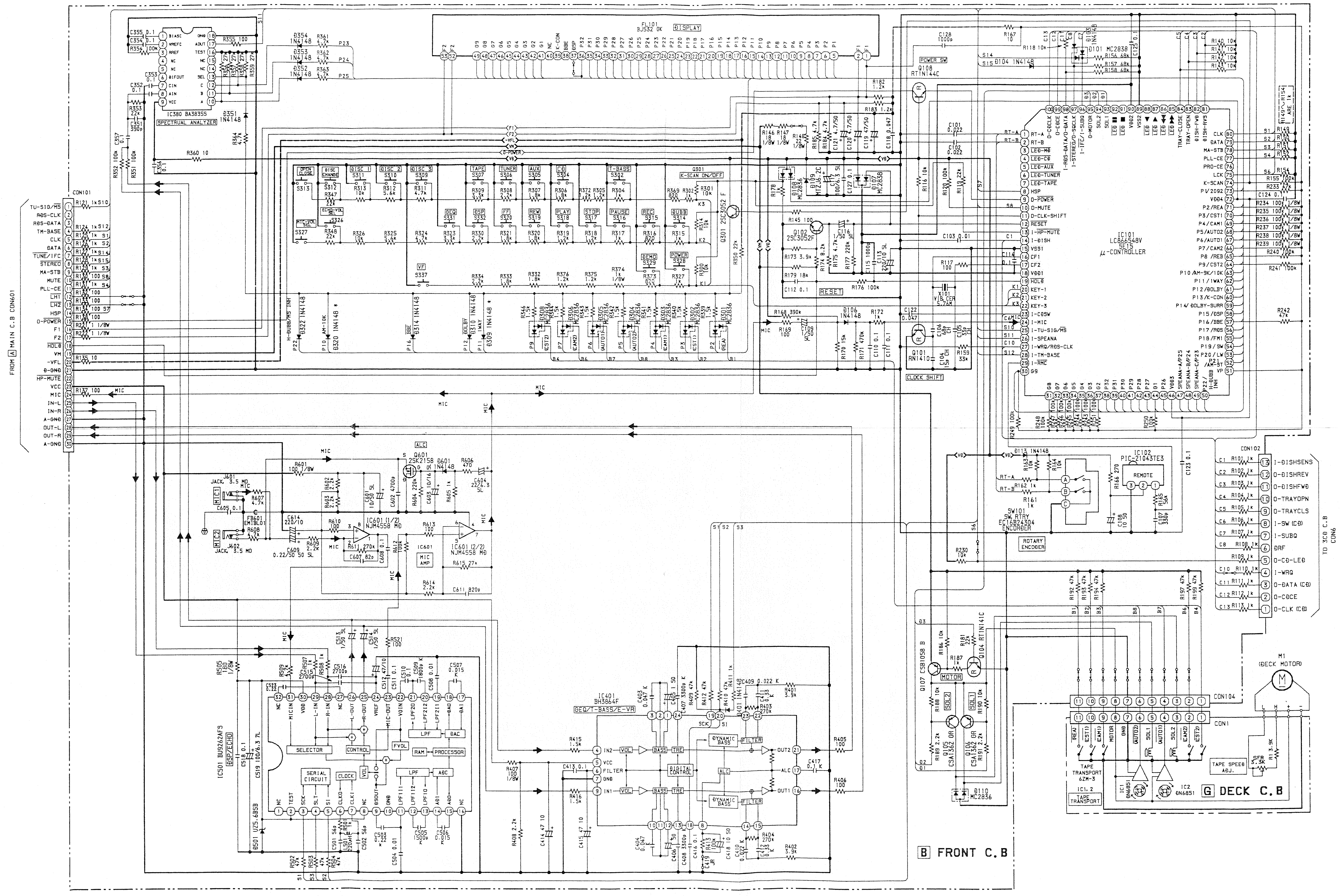
SCHEMATIC DIAGRAM – 6 (FRONT: S33 <LH>)


FL101 BJ532 GK DISPLAY
IC380 BA3835S SPECTRUM ANALYZER
IC101 LC866548V 5E15 μ-CONTROLLER
IC102 PIC-21043TE3 REMOTE
SW101 ROTARY ENCODER
IC401 BH3864F GEQ/T-BASS/E-VR
IC601 NJM4558 MD MIC AMP
J601 JACK 3.5 MD MIC
CON101
FROM A MAIN C.B CON601
CON102
TO 3CD C.B CON6
CON104
CON1
M1 (DECK MOTOR)
TAPE TRANSPORT 2ZM-3MK2
IC1, 2 TAPE TRANSPORT
B FRONT C.B
G DECK C.B

WIRING – 5 (FRONT : S33 <LH>)

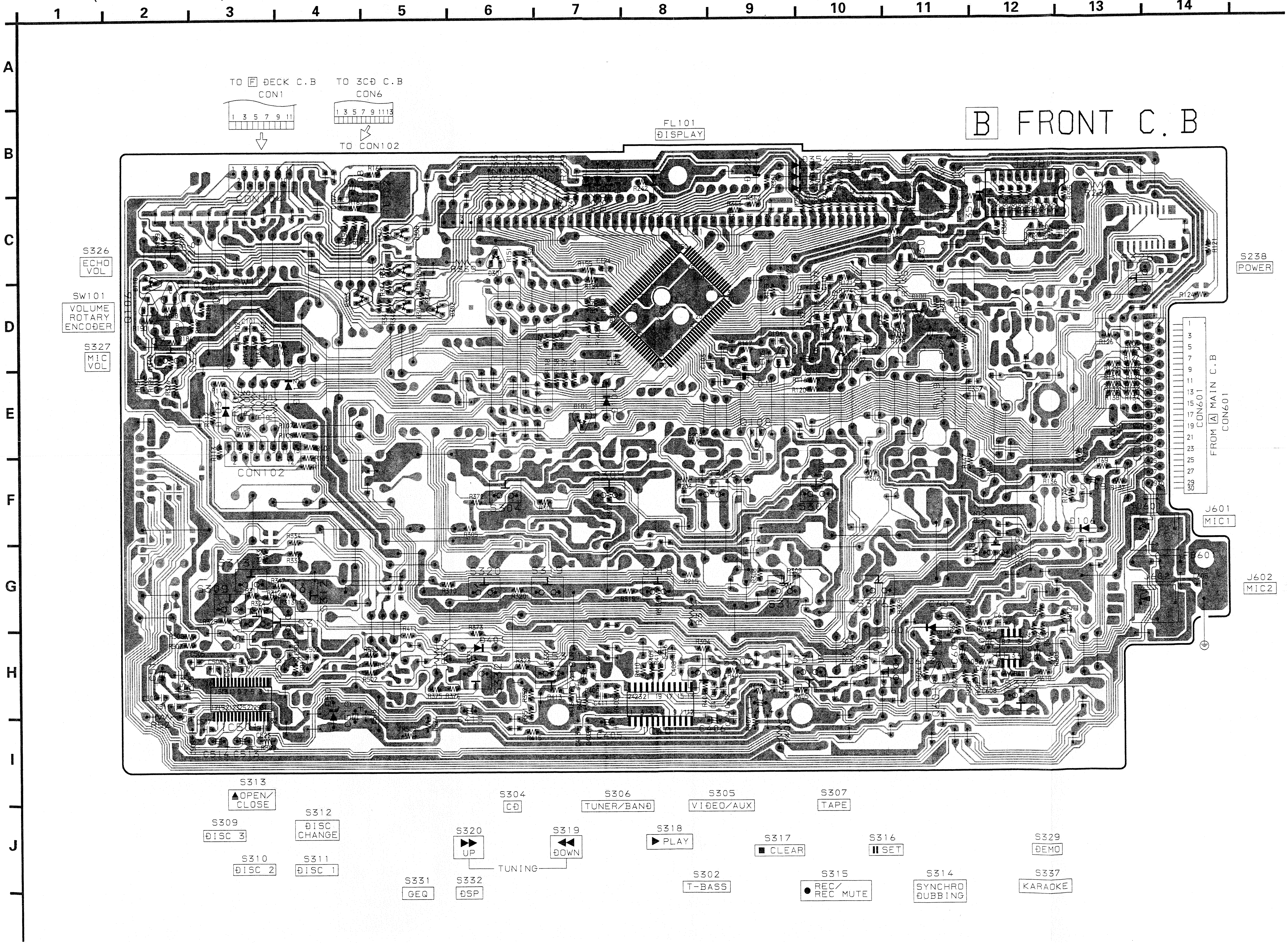

B FRONT C.B
1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
TO F DECK C.B
CON1
1 3 5 7 9 11 13 15
TO 3CD C.B
CON6
1 3 5 7 9 11 13
TO CON102
FL101
DISPLAY
CON104
CON102
IC101
IC102
IC380
IC401
SW101
VOLUME
ROTARY
ENCODER
S238
POWER
CON601
FROM A MAIN C.B
CON601
1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
30
J601
MIC1
FB601
VR601
MIC
VOLUME
S313
▲ OPEN/
CLOSE
S309
DISC 3
S312
DISC
CHANGE
S310
DISC 2
S311
DISC 1
S304
CD
S306
TUNER/BAND
S305
VIDEO/AUX
S307
TAPE
S320
▶▶
UP
S319
◀◀
DOWN
TUNING
S318
▶ PLAY
S317
■ CLEAR
S316
II SET
S329
DEMO
S330
ROCK
S331
POP
S332
CLASSIC
GEQ
S302
T-BASS
S315
● REC/
REC MUTE
S314
SYNCHRO
DUBBING
S337
KARAOKE

SCHEMATIC DIAGRAM – 7 (FRONT: A31 <U>)



FROM A MAIN C.B CON601
CON101
IC380 BA3835S
SPECTRUAL ANALYZER
FL101 BJ532 GK
DISPLAY
IC101 LC866548V
μ-CONTROLLER
X101
RESET
CLOCK SHIFT
Q301
K-SCAN ON/OFF
OPEN CLOSE
DISC CHANGE
DISC 1
DISC 2
DISC 3
TAPE
TUNER
AUX
CD
T-BASS
GEQ
DSP
FF
REW
PLAY
STOP
PAUSE
REC
DUBB
DEMO
POWER
VF
ECHO-VOL
MIC-VOL
IC102 PIC-21043TE3
REMOTE
SW101 SW, RTRY EC16B24304
ENCODER
ROTARY ENCODER
CON102
TO 3CD C.B CON6
I-DISHSENS
O-DISHREV
O-DISHFWD
O-TRAYOPN
O-TRAYCLS
I-SW (CD)
I-SUBQ
DRF
O-CD-LED
I-WRQ
O-DATA (CD)
O-CDCE
O-CLK (CD)
J601 JACK, 3.5 MD
J602 JACK, 3.5 MD
MIC1
MIC2
ALC
Q601 2SK2158
IC601 (1/2) NJM4558 MD
IC601 (2/2) NJM4558 MD
MIC AMP
IC501 BU9262AFS
DSP/ECHO
SELECTOR
CONTROL
SERIAL CIRCUIT
CLOCK
LPF
BAC
RAM
PROCESSOR
ABC
IC401 BH3864F
GEQ/T-BASS/E-VR
DYNAMIC BASS
FILTER
DIGITAL CONTROL
MOTOR
SOL2
SOL1
CON104
CON1
M1 (DECK MOTOR)
TAPE TRANSPORT 6ZM-3
IC1, 2 TAPE TRANSPORT
TAPE SPEED ADJ.
SFR
IC1 GN6851
IC2 GN6851
G DECK C.B
B FRONT C.B

WIRING – 6 (FRONT : A31 <U>)



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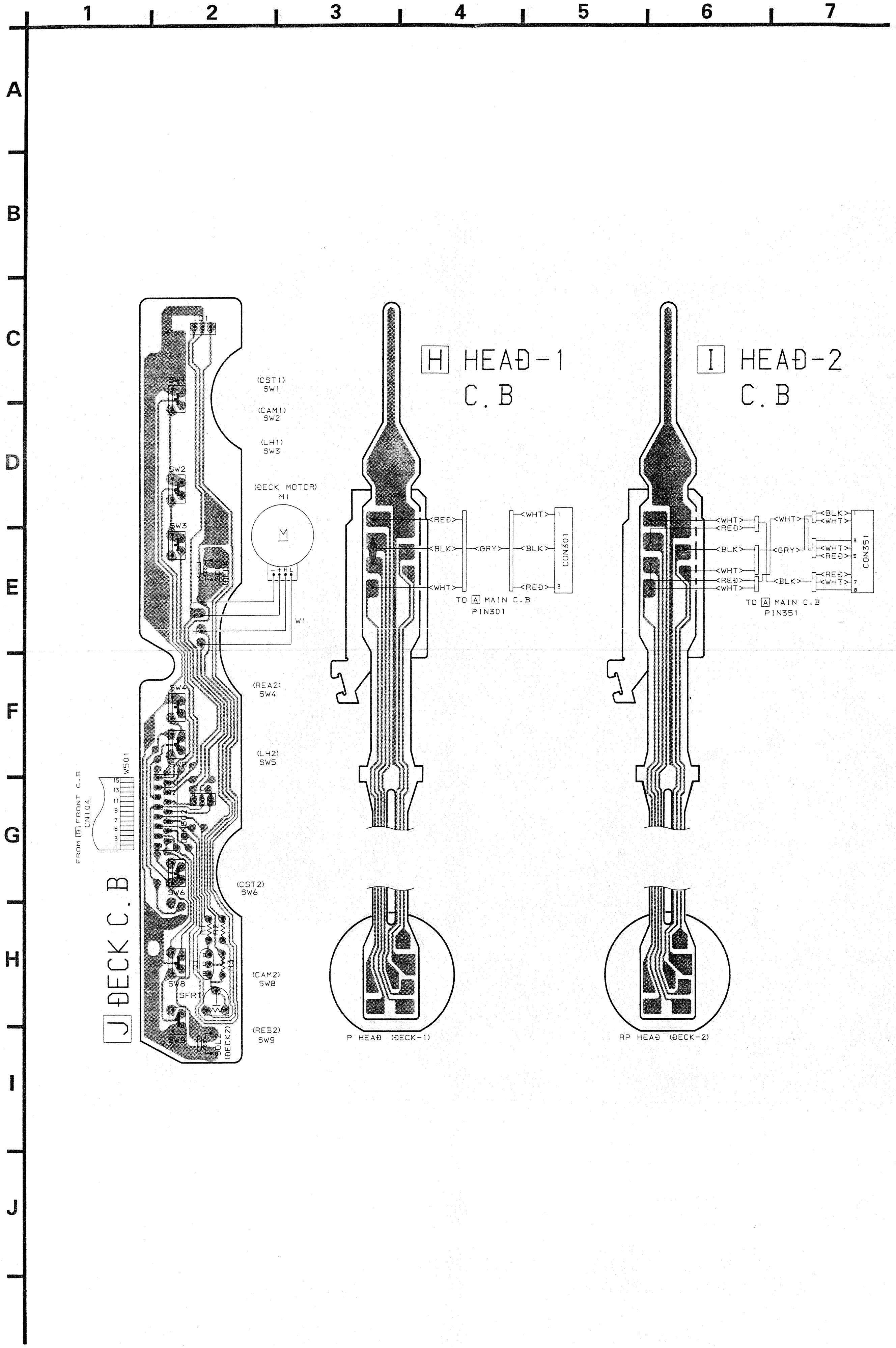
H
I
J
TO F DECK C.B
CON1
1 3 5 7 9 11
TO 3CD C.B
CON6
1 3 5 7 9 11 13
TO CON102
FL101
DISPLAY
B FRONT C.B
CON101
CON102
S326
ECHO VOL
SW101
VOLUME ROTARY ENCODER
S327
MIC VOL
S238
POWER
FROM A MAIN C.B
CON601
J601
MIC1
J602
MIC2
S313
OPEN/CLOSE
S312
DISC CHANGE
S309
DISC 3
S310
DISC 2
S311
DISC 1
S304
CD
S306
TUNER/BAND
S305
VIDEO/AUX
S307
TAPE
S320
UP
S319
DOWN
TUNING
S318
PLAY
S317
CLEAR
S316
SET
S329
DEMO
S331
GEQ
S332
DSP
S302
T-BASS
S315
REC/
REC MUTE
S314
SYNCHRO
DUBBING
S337
KARAOKE

WIRING – 7 (DECK: 2ZM-3 MK3)


1
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A
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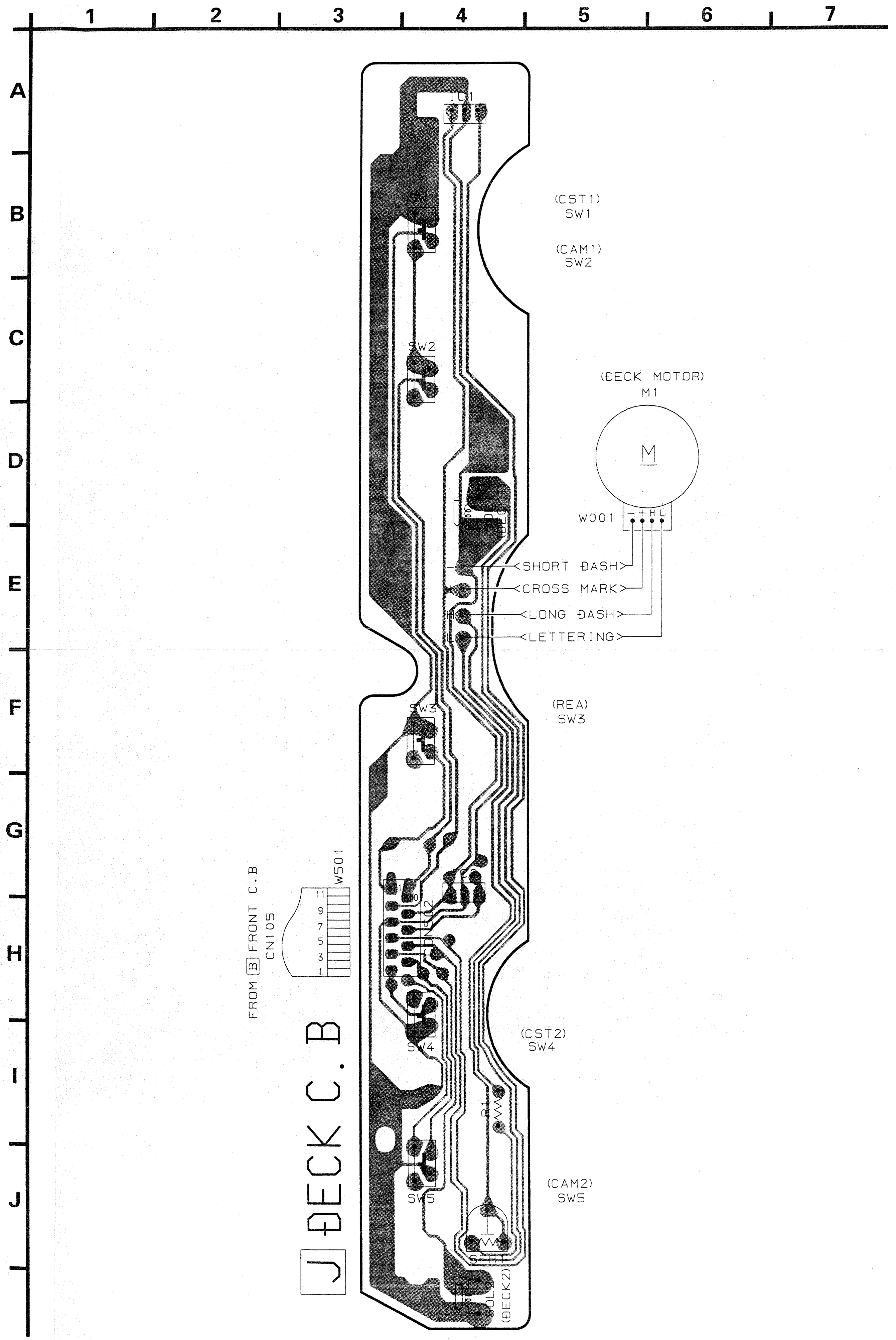
D
E
F
G
H
I
J
J DECK C.B
IC1
SW1
SW2
SW3
SW4
SW5
SW6
SW8
SW9
(CST1)
SW1
(CAM1)
SW2
(LH1)
SW3
(DECK MOTOR)
M1
M
- + H L
W1
(REA2)
SW4
(LH2)
SW5
(CST2)
SW6
(CAM2)
SW8
(REB2)
SW9
R1
R2
R3
Q1
SFR1
SOL2
(DECK2)
FROM B FRONT C.B
CN104
W501
15
13
11
9
7
5
3
1
H HEAD-1
C.B
<RED>
<BLK>
<WHT>
<GRY>
<WHT>
<BLK>
<RED>
CON301
1
3
TO A MAIN C.B
PIN301
P HEAD (DECK-1)
I HEAD-2
C.B
<WHT>
<RED>
<BLK>
<WHT>
<RED>
<WHT>
<WHT>
<GRY>
<BLK>
<BLK>
<WHT>
<WHT>
<RED>
<RED>
<WHT>
CON351
1
3
5
7
8
TO A MAIN C.B
PIN351
RP HEAD (DECK-2)

WIRING – 8 (DECK: 6ZM-3)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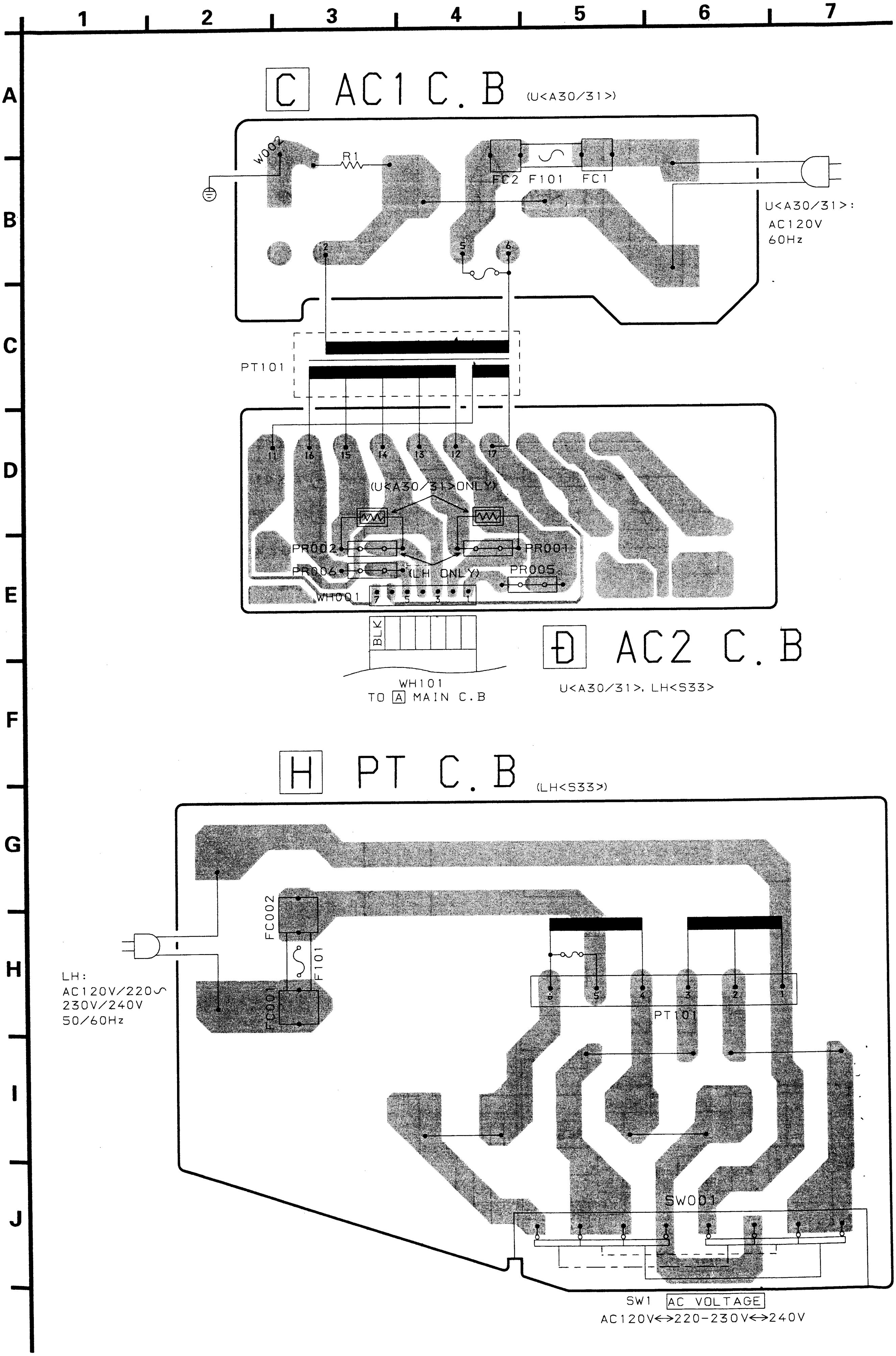
I
J
J DECK C.B
IC1
SW1
SW2
SW3
SW4
SW5
(CST1)
SW1
(CAM1)
SW2
(DECK MOTOR)
M1
M
W001
- + H L
<SHORT DASH>
<CROSS MARK>
<LONG DASH>
<LETTERING>
(REA)
SW3
(CST2)
SW4
(CAM2)
SW5
R1
SFR1
SOL2
(DECK2)
FROM B FRONT C.B
CN105
W501
11
9
7
5
3
1

WIRING – 9 (AC & PT)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A
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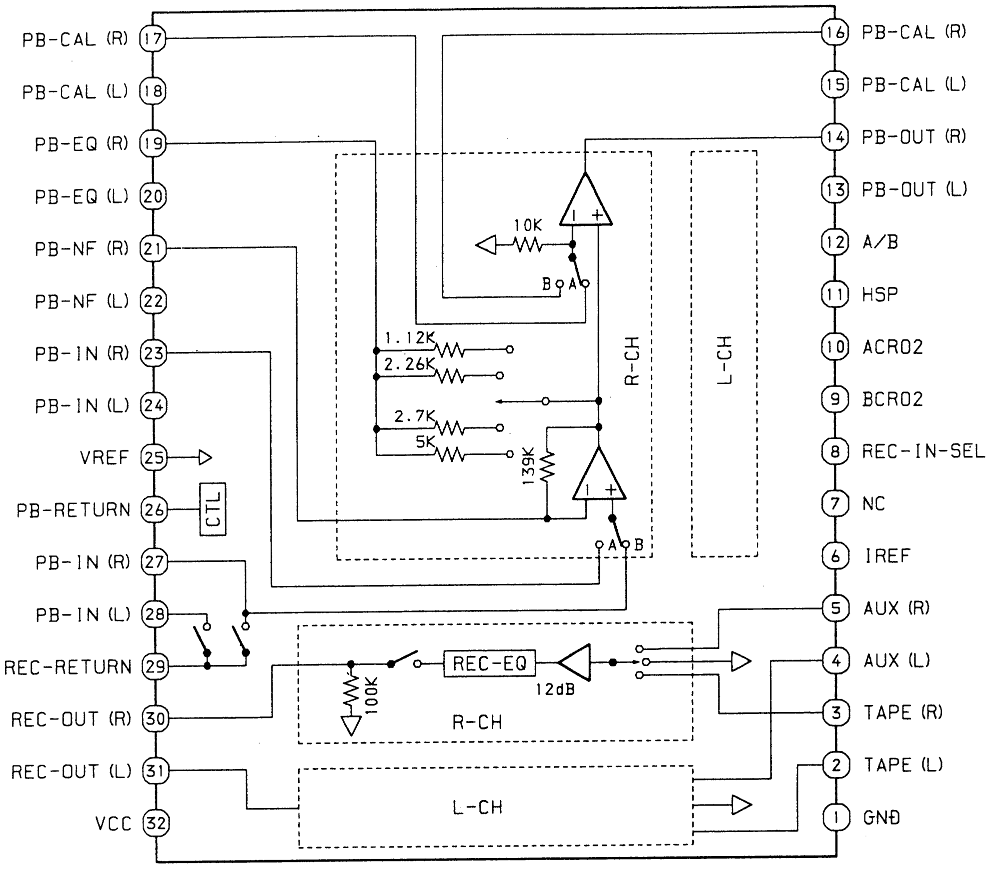
F
G
H
I
J
C AC1 C.B
(U<A30/31>)
W002
R1
FC2
F101
FC1
U<A30/31>:
AC120V
60Hz
2
5
6
PT101
11
16
15
14
13
12
17
(U<A30/31>ONLY)
PR002
PR001
PR006
(LH ONLY)
PR005
WH001
7
5
3
1
BLK
WH101
TO A MAIN C.B
D AC2 C.B
U<A30/31>, LH<S33>
H PT C.B
(LH<S33>)
FC002
F101
FC001
LH:
AC120V/220∽
230V/240V
50/60Hz
PT101
SW001
SW1
AC VOLTAGE
AC120V↔220-230V↔240V

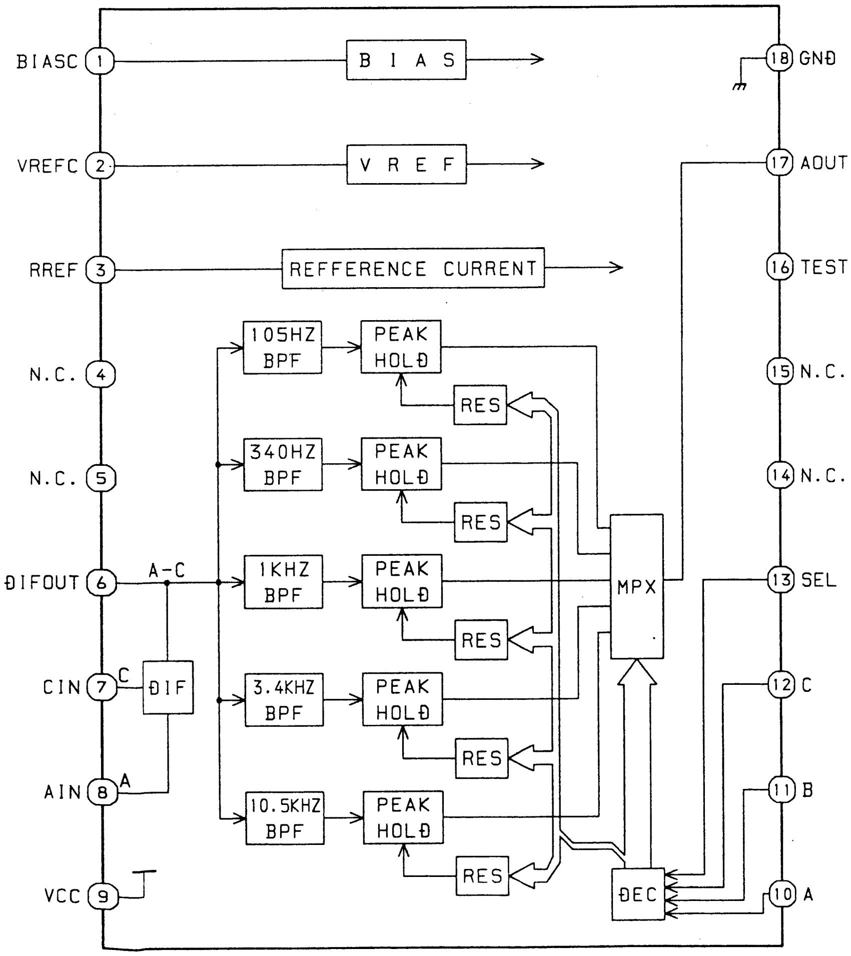
IC BLOCK DIAGRAM

IC,BA7762FS



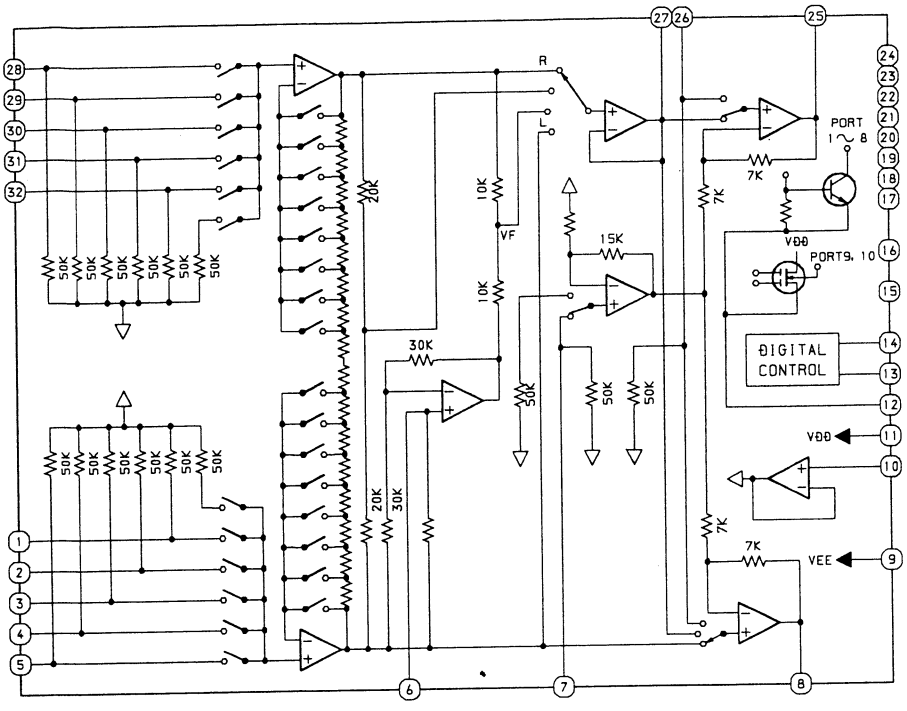
PB-CAL (R) 17
PB-CAL (L) 18
PB-EQ (R) 19
PB-EQ (L) 20
PB-NF (R) 21
PB-NF (L) 22
PB-IN (R) 23
PB-IN (L) 24
VREF 25
PB-RETURN 26
PB-IN (R) 27
PB-IN (L) 28
REC-RETURN 29
REC-OUT (R) 30
REC-OUT (L) 31
VCC 32
CTL
10K
B A
1.12K
2.26K
2.7K
5K
139K
A B
R-CH
L-CH
REC-EQ
12dB
100K
R-CH
L-CH
16 PB-CAL (R)
15 PB-CAL (L)
14 PB-OUT (R)
13 PB-OUT (L)
12 A/B
11 HSP
10 ACRO2
9 BCRO2
8 REC-IN-SEL
7 NC
6 IREF
5 AUX (R)
4 AUX (L)
3 TAPE (R)
2 TAPE (L)
1 GND

IC,BA3835S



BIASC 1
VREFC 2
RREF 3
N.C. 4
N.C. 5
DIFOUT 6
CIN 7
AIN 8
VCC 9
B I A S
V R E F
REFFERENCE CURRENT
A-C
C
A
DIF
105HZ BPF
340HZ BPF
1KHZ BPF
3.4KHZ BPF
10.5KHZ BPF
PEAK HOLD
PEAK HOLD
PEAK HOLD
PEAK HOLD
PEAK HOLD
RES
RES
RES
RES
RES
MPX
DEC
18 GND
17 AOUT
16 TEST
15 N.C.
14 N.C.
13 SEL
12 C
11 B
10 A

IC,BH3810FS



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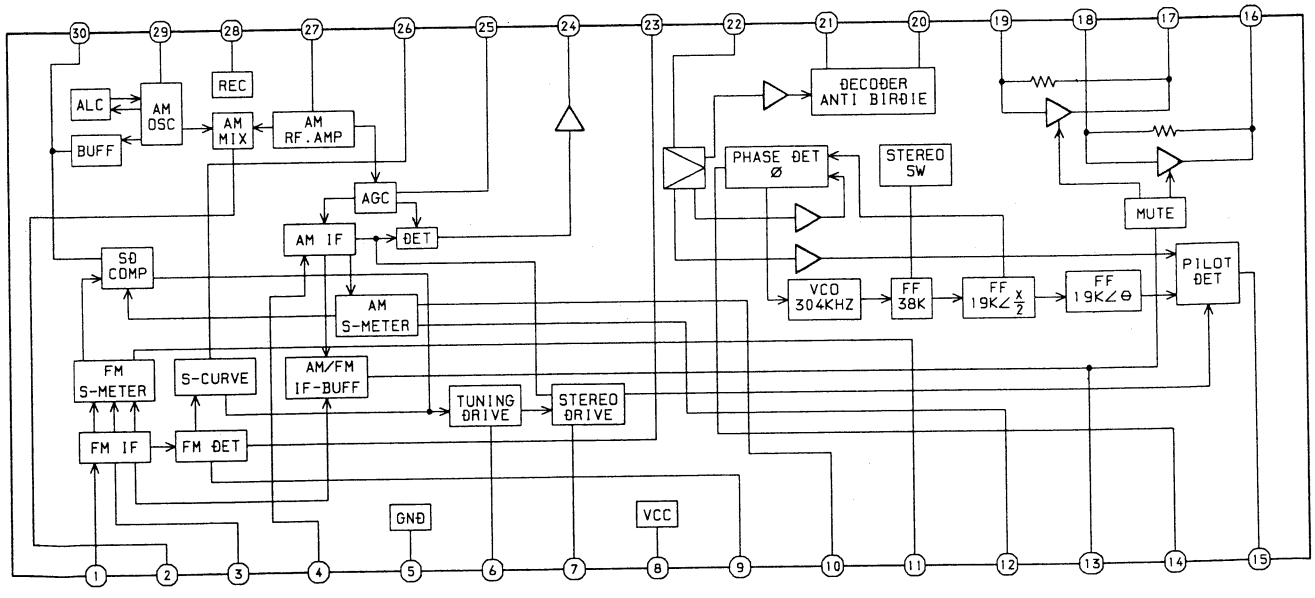
21
22
23
24
25
26
27
50K
20K
30K
10K
VF
R
L
15K
7K
7K
PORT
1 ~ 8
VDD
PORTS 9, 10
DIGITAL CONTROL
VDD
VEE

IC,LA1837



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16
ALC
AM OSC
BUFF
REC
AM MIX
AM RF.AMP
AGC
AM IF
DET
SD COMP
AM S-METER
FM S-METER
S-CURVE
AM/FM IF-BUFF
TUNING DRIVE
STEREO DRIVE
FM IF
FM DET
GND
VCC
DECODER ANTI BIRDIE
PHASE DET Ø
STEREO SW
MUTE
PILOT DET
VCO 304KHZ
FF 38K
FF 19K∠x/2
FF 19K∠θ
1
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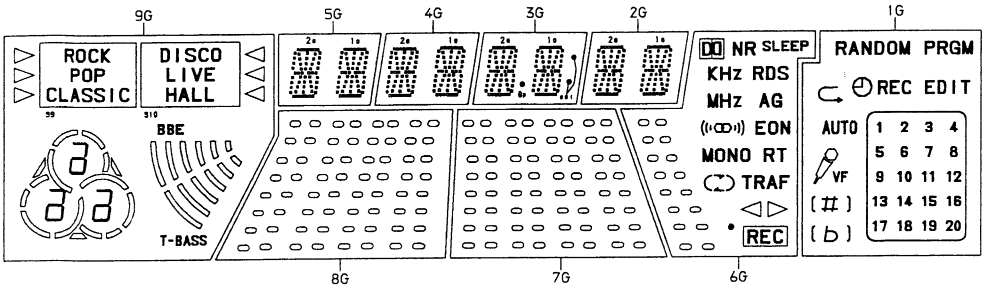
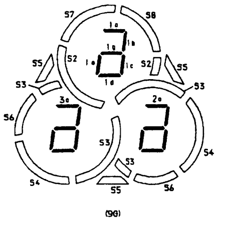
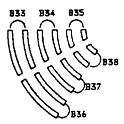
FL GRID ASSIGNMENT / ANODE CONNECTION

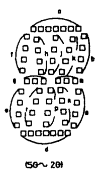
FL,BJ532GK

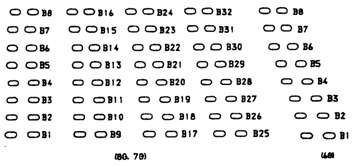
GRID ASSIGNMENT

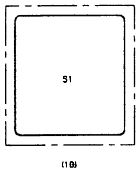

9G
5G
4G
3G
2G
1G
ROCK
POP
CLASSIC
DISCO
LIVE
HALL
S9
S10
BBE
T-BASS
NR SLEEP
KHz RDS
MHz AG
EON
MONO RT
TRAF
REC
RANDOM PRGM
REC EDIT
AUTO
VF
1 2 3 4
5 6 7 8
9 10 11 12
13 14 15 16
17 18 19 20
8G
7G
6G


S7
S8
S2
S5
S3
S6
S4
S5
S6
S3
S4
(9G)


B33
B34
B35
B38
B37
B36



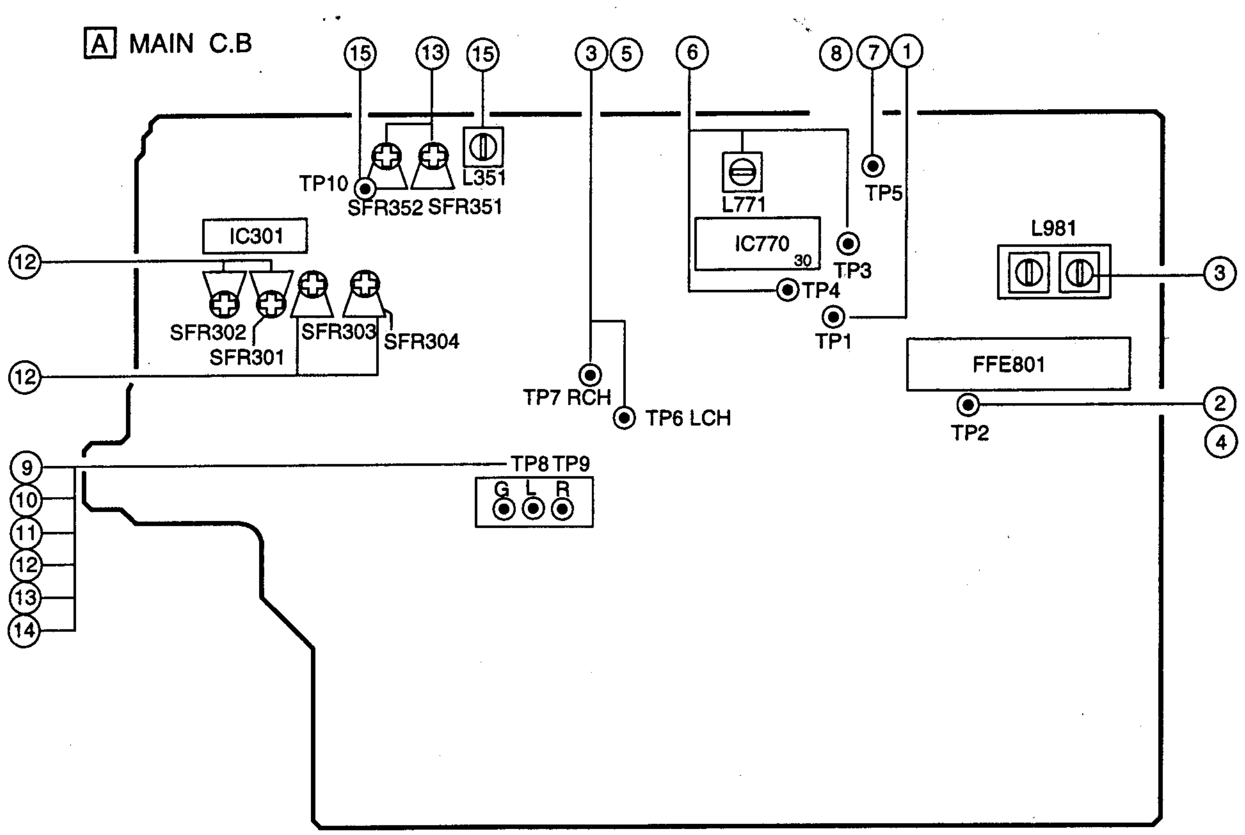

B8
B7
B6
B5
B4
B3
B2
B1
B16
B15
B14
B13
B12
B11
B10
B9
B24
B23
B22
B21
B20
B19
B18
B17
B32
B31
B30
B29
B28
B27
B26
B25
(8G, 7G)
(6G)

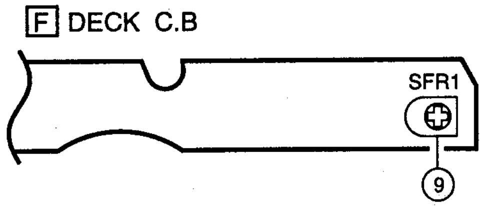


ANODE CONNECTION

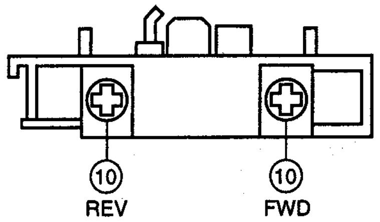
	9G	8G, 7G	6G	5G, 4G	3G	2G	1G
P1	S8	B32	▷	-	c o l(DN)	-	**RANDOM**
P2	S2	B24	◁	1d	1d	1d	-
P3	1b	B16	**SLEEP**	1n	1n	1n	**PRGM**
P4	1c	B8	B8	1p	1p	1p	**EDIT**
P5	1e	B31	○	1r	1r	1r	**1**
P6	1a, 1d, 1g	B23	**REC**	1e	1e	1e	**2**
P7	2b	B15	**KHz**	1c	1c	1c	**3**
P8	2c	B7	B7	1g	1g	1g	**4**
P9	2e	B30	**MHz**	1m	1m	1m	**5**
P10	2a, 2d, 2g	B22	-	1f	1f	1f	**6**
P11	3b	B14	**DD NR**	1b	1b	1b	**7**
P12	3c	B6	B6	1k	1k	1k	**8**
P13	3e	B29	**RDS**	1j	1j	1j	**9**
P14	3a, 3d, 3g	B21	-	1h	1h	1h	**10**
P15	S3	B13	-	1a	1a	1a	**11**
P16	S5	B5	B5	-	c o l(UP)	-	**12**
P17	S7	B28	-	-	Dp	-	**13**
P18	S4	B20	-	2d	2d	2d	**14**
P19	S6	B12	-	2n	2n	2n	**15**
P20	(HALL) ◁	B4	B4	2p	2p	2p	**16**
P21	(LIVE) ◁	B27	**AG**	2r	2r	2r	**17**
P22	(DISCO) ◁	B19	((ıꝏı))	2e	2e	2e	**18**
P23	▷ (CLASSIC)	B11	**EON**	2c	2c	2c	**19**
P24	▷ (POP)	B3	B3	2g	2g	2g	**20**
P25	▷ (ROCK)	B26	**RT**	2m	2m	2m	**AUTO**
P26	B36	B18	**MONO**	2f	2f	2f	🎤 **VF**
P27	B37	B10	**TRAF**	2b	2b	2b	◷
P28	B38	B2	B2	2k	2k	2k	**REC**
P29	B33	B25	)	2j	2j	2j	↪
P30	B34	B17	⇄	2h	2h	2h	[(#)]
P31	B35	B9	(	2a	2a	2a	[(♭)]
P32	S9 **T-BASS**	B1	B1	-	-	-	S1
P33	S10	-	-	-	-	-	-
P34	**BBE**	-	-	-	-	-	-
P35	-	-	-	-	-	-	♭ #

ADJUSTMENT <TUNER / DECK>





DECK-1 P, DECK-2 R / P / E HEAD



< TUNER SECTION >

1. Clock Frequency Check
   Settings : • Test point : TP1
   Method : Set to MW 1710kHz and check that the test point is 2160kHz ± 45Hz.

2. MW VT Check
   Settings : • Test point : TP2 (VT)
   Method : Set to MW 1710kHz and check that the test point is 6.0V ± 1.0V.

3. MW Tracking Adjustment
   Settings : • Test point : TP6, TP7
   • Adjustment location :
   L981 .... 1000kHz
   Method : The level at 1000kHz is adjusted to MAX by L981.

4. FM VT Check
   Settings : • Test point : TP2 (VT)
   Method : Set to FM 108.0MHz and check that the test point is less than 8.5V.
   Set to FM 87.5MHz and check that the test point is more than 1.5V.

5. FM Tracking Check
   Settings : • Test point : TP6, TP7
   Method : • Set to FM 98.0MHz and check that the test point is 2 ± 6dB.

6. DC Balance / Mono Distortion Adjustment
   Settings : • Test point : TP3, TP4
   • Adjustment location : L771
   • Input level : 54dB
   Method : Set to FM 98.0MHz and adjust L771 so that the voltage between TP3 and TP4 becomes 0V ± 0.04V.
   Next, check that the distortion is less than 1.3%

7. Auto Stop Level Check
   Settings : • Test point : TP5
   • Input level : adjustable
   Method : Set to FM 98.0 MHz and check that the voltage low about 0.1V. After that voltage high about 7.0V out by 2dB down.

8. Auto Stop Level Check
   MW
   Settings : • Test point : TP5
   • Input level : adjustable
   Method : Set to MW 1000kHz and check that the test point is 35 ~ 60dB.

   FM
   Settings : • Test point : TP5
   • Input level : adjustable
   Method : Set to FM 88.0MHz and check that the test point is 25dB ± 10dB.

< DECK SECTION >

9. Tape Speed Adjustment
   Settings : • Test tape : TTA–100
   • Test point : TP8, TP9
   • Adjustment location : SFR1
   Method : Play back the test tape and adjust SFR1 so that the frequency counter reads 3000Hz ± 5Hz.

10. Head Azimuth Adjustment
    Settings : • Test tape : TTA–410
    • Test point : TP8, TP9
    • Adjustment location : Head azimuth adjustment screw
    Method : Play back the 10kHz signal of the test tape and adjust screw so that the output becomes maximum. Next, perform on each FWD PLAY and REV PLAY mode.

11. PB Frequency Response Check (DECK 1, DECK 2)
    Settings : • Test tape : TTA–410
    • Test point : TP8, TP9
    Method : Play back the 315Hz and 10kHz signals of the test tape and check that the output ratio of the 10kHz signal with respect to that of the 315Hz signal is within 2dB.

12. PB Sensitivity Adjustment (DECK 1, DECK 2)
    Settings : • Test tape : TTA–200
    • Test point : TP8, TP9
    • Adjustment location :
    SFR301 (DECK 1, Lch)
    SFR302 (DECK 1, Rch)
    SFR303 (DECK 2, Lch)
    SFR304 (DECK 2, Rch)
    Method : Play back the test tape and adjust SFRs so that the output level of the test point becomes 330mV.

13. REC/PB Frequency Response Adjustment
    Settings : • Test tape : TTA–602
    • Test point : TP8, TP9
    • Input signal : 1kHz / 10kHz (LINE IN)
    • Adjustment location : SFR351 (Lch)
    SFR352 (Rch)
    Method : Apply a 1kHz signal and REC mode.
    Then adjust OSC attenuator so that the output level at the TP8, TP9 becomes 210mV. Record and play back the 1kHz and 10kHz signals and adjust SFRs so that the output of the 10kHz signals becomes 0dB ± 0.5dB with respect to that of the 1kHz signal.

14. REC/PB Sensitivity Check
    Settings : • Test tape : TTA–602
    • Test point : TP8, TP9
    Method : Apply a 1kHz signal and REC mode.
    and check that the output level at the TP8, TP9 is 21mV. Record and play back the 1kHz signals so that the output level is 17mV ± 3dB.

15. Bias OSC Frequency Adjustment
    Settings : • Test tape : TTA–601
    • Test point : TP10
    • Adjustment location : L351
    Method : Set to the REC mode. Adjust L451 so that the frequency counter of the test point is 85kHz ± 1kHz.

PRAC

<TUNE

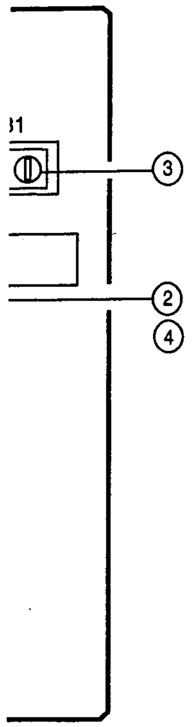
<FM SE
IHF Sensi
(THD 3%
S/N 50dB

Signal to

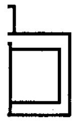
Distortior

Stereo sep
Intermedi

<MW SE
Sensitivit
(S/N 20 d
Distortion
Intermedi



E HEAD



:k that the test point is

:nt

: L771 so that the
becomes 0V ± 0.04V.
is less than 1.3%

‹ that the voltage low
high about 7.0V out

8. Auto Stop Level Check

MW
Settings : • Test point : TP5
• Input level : adjustable
Method : Set to MW 1000kHz and check that the test point is 35 ~ 60dB.

FM
Settings : • Test point : TP5
• Input level : adjustable
Method : Set to FM 88.0MHz and check that the test point is 25dB ± 10dB.

< DECK SECTION >

9. Tape Speed Adjustment
Settings : • Test tape : TTA–100
• Test point : TP8, TP9
• Adjustment location : SFR1
Method : Play back the test tape and adjust SFR1 so that the frequency counter reads 3000Hz ± 5Hz.

10. Head Azimuth Adjustment
Settings : • Test tape : TTA–410
• Test point : TP8, TP9
• Adjustment location : Head azimuth adjustment screw
Method : Play back the 10kHz signal of the test tape and adjust screw so that the output becomes maximum. Next, perform on each FWD PLAY and REV PLAY mode.

11. PB Frequency Response Check (DECK 1, DECK 2)
Settings : • Test tape : TTA–410
• Test point : TP8, TP9
Method : Play back the 315Hz and 10kHz signals of the test tape and check that the output ratio of the 10kHz signal with respect to that of the 315Hz signal is within 2dB.

12. PB Sensitivity Adjustment (DECK 1, DECK 2)
Settings : • Test tape : TTA–200
• Test point : TP8, TP9
• Adjustment location :
SFR301 (DECK 1, Lch)
SFR302 (DECK 1, Rch)
SFR303 (DECK 2, Lch)
SFR304 (DECK 2, Rch)
Method : Play back the test tape and adjust SFRs so that the output level of the test point becomes 330mV.

13. REC/PB Frequency Response Adjustment
Settings : • Test tape : TTA–602
• Test point : TP8, TP9
• Input signal : 1kHz / 10kHz (LINE IN)
• Adjustment location : SFR351 (Lch)
SFR352 (Rch)
Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP8, TP9 becomes 210mV. Record and play back the 1kHz and 10kHz signals and adjust SFRs so that the output of the 10kHz signals becomes 0dB ± 0.5dB with respect to that of the 1kHz signal.

14. REC/PB Sensitivity Check
Settings : • Test tape : TTA–602
• Test point : TP8, TP9
Method : Apply a 1kHz signal and REC mode. and check that the output level at the TP8, TP9 is 21mV. Record and play back the 1kHz signals so that the output level is 17mV ± 3dB.

15. Bias OSC Frequency Adjustment
Settings : • Test tape : TTA–601
• Test point : TP10
• Adjustment location : L351
Method : Set to the REC mode. Adjust L451 so that the frequency counter of the test point is 85kHz ± 1kHz.

PRACTICAL SERVICE FIGURE

<TUNER SECTION>

<FM SECTION>

IHF Sensitivity :	6dB ± 6dB
(THD 3%)	[at 87.5 / 98.0 / 108.0MHz]
S/N 50dB Quieting sensitivity :	30dB ± 6dB [at 87.5 / 98.0 / 108.0MHz]
Signal to noise ratio :	More than 65dB [at 98.0MHz]<MONO> More than 64dB [at 98.0MHz]<STEREO>
Distortion :	1.3% [at 98.0MHz]<MONO> Less than 2.0% [at 98.0MHz]<STEREO>
Stereo separation :	More than 25dB [at 98.0MHz]
Intermediate frequency :	10.7MHz

<MW SECTION>

Sensitivity :	55dB ± 5dB [at 600kHz]
(S/N 20 dB)	53dB ± 5dB [at 1000 / 1400kHz]
Distortion :	Less than 1.5% [at 1000kHz]
Intermediate frequency :	450kHz

<DECK SECTION>

<6ZM-3>

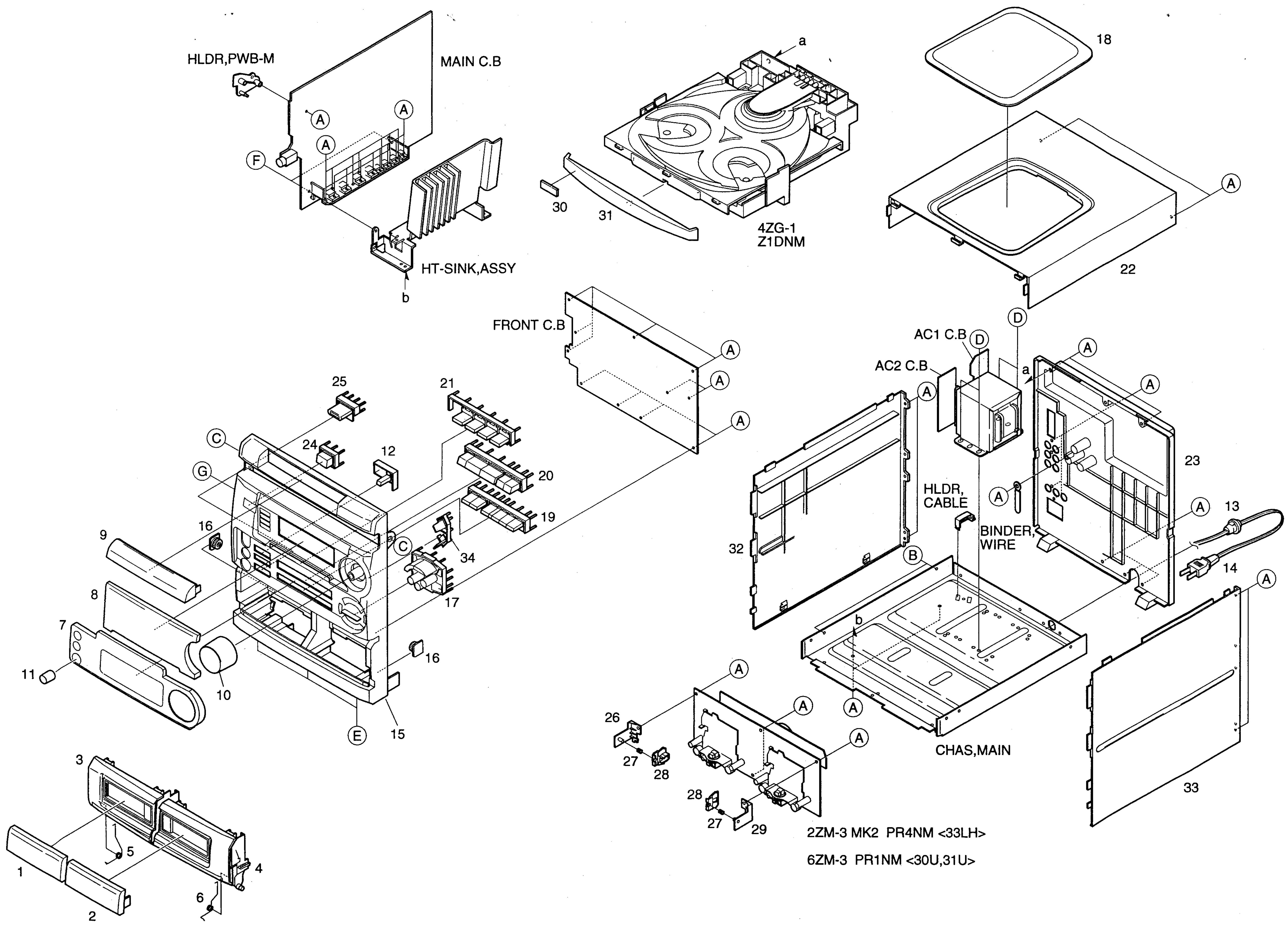
Tape speed :	3000Hz ± 45Hz
Wow & flutter :	Less than 0.25% (R.M.S)
Take-up torque :	30 ~ 55g-cm (FWD, REV)
F.F & REW torque :	75 ~ 180g-cm
Back tension :	3 ± 4g-cm (FWD, REV)

<2ZM-3MK2>

Tape speed :	3000Hz ± 45Hz
Wow & flutter :	Less than 0.21% (R.M.S)
Take-up torque :	30 ~ 55g-cm (FWD, REV)
F.F & REW torque :	75 ~ 180g-cm
Back tension :	3 ± 4g-cm (FWD, REV)

PB Output level :	2.9V ± 3dB (SP OUT 2V)
REC/PB Output level :	1.9V ± 3dB (SP OUT 2V)
Distortion (REC/PB) :	Less than 2.0% (NORM, CrO2)
Noise level (PB) :	Less than 18mV (DOLBY NR ON / OFF NORM. Vol MAX.)
Noise level (REC/PB) :	Less than 30mV (DOLBY NR ON / OFF NORM.)
Crosstalk :	More than 60dB (1kHz, 0VU)
Channel separation :	More than 30dB (1kHz, 0VU)
Erasing ratio :	More than 60dB (at 125Hz)
Test tape :	NORMAL : TTA–602 CrO2 : TTA–320

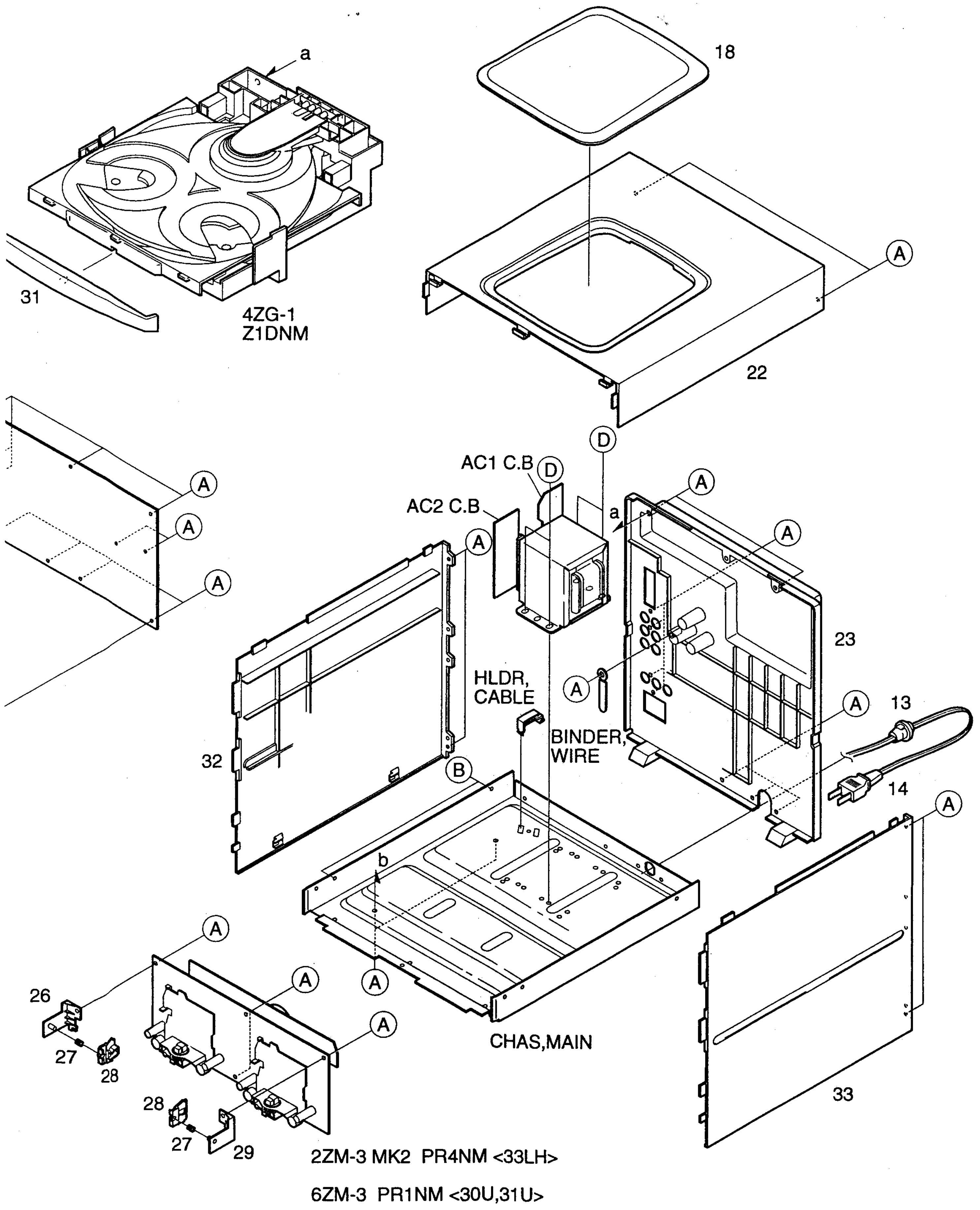
MECHANICAL EXPLODED VIEW 1 / 1


HLDR,PWB-M
MAIN C.B
A
A
A
F
HT-SINK,ASSY
b
a
30
31
4ZG-1
Z1DNM
18
A
22
FRONT C.B
A
A
A
D
AC1 C.B
D
AC2 C.B
a
A
A
A
25
21
C
24
12
20
G
19
9
16
C
34
17
8
7
11
10
16
E
15
23
A
HLDR,
CABLE
BINDER,
WIRE
A
13
14
32
B
b
A
A
26
A
A
27
28
CHAS,MAIN
33
3
28
5
27
29
4
1
6
2
2ZM-3 MK2 PR4NM <33LH>
6ZM-3 PR1NM <30U,31U>

MECHANICAL P

If can’t understand for D

REF. NO.	PART NO.
1	87-NF6-041-01
2	87-NF6-042-01
3	87-NF6-011-01
3	87-NF7-013-01
4	87-NF6-012-01
4	87-NF7-014-01
5	82-NF5-218-01
6	82-NF5-219-01
7	87-NF7-016-01
7	87-NF7-078-01
7	87-NF7-008-01
8	87-NF7-037-01
8	87-NF7-032-01
8	87-NF7-036-01
9	87-NF6-043-01
10	87-NF6-036-01
11	87-NF6-037-01
12	87-NF7-026-01
13	87-085-185-01
13	87-085-189-01
⚠ 14	87-050-079-01
⚠ 14	87-050-053-01
15	87-NF7-073-01
15	87-NF7-002-01
15	87-NF7-007-01
16	87-063-165-01
17	87-NF7-021-01
18	86-NF6-101-01
19	87-NF7-028-01
19	87-NF7-024-01

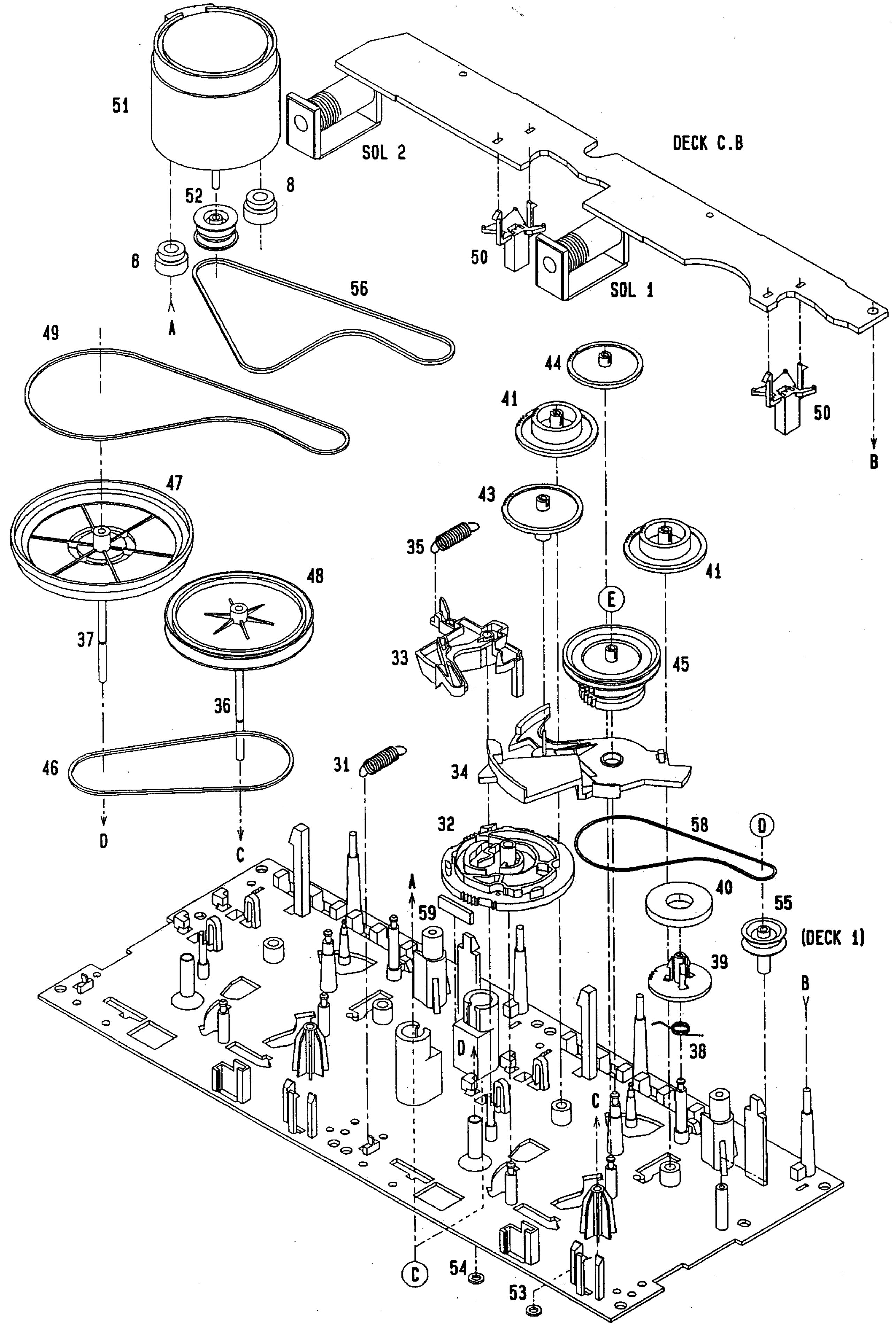


MECHANICAL PARTS LIST 1 / 1

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NF6-041-010		WINDOW,CASS 1
2	87-NF6-042-010		WINDOW,CASS 2
3	87-NF6-011-010		BOX,CASS 1H<33LH>
3	87-NF7-013-010		BOX,CASS 1U<30U,31U>
4	87-NF6-012-010		BOX,CASS 2H<33LH>
4	87-NF7-014-010		BOX,CASS 2U<30U,31U>
5	82-NF5-218-010		SPR-T,EJECT 1(SIN)
6	82-NF5-219-010		SPR-T,EJECT 2(SIN)
7	87-NF7-016-010		PANEL,FR U<30U>
7	87-NF7-078-010		PANEL,FR LH<33LH>
7	87-NF7-008-010		PANEL,FR U1<31U>
8	87-NF7-037-010		WINDOW,DISPLAY LH<33LH>
8	87-NF7-032-010		WINDOW,DISPLAY U<30U>
8	87-NF7-036-010		WINDOW,DISPLAY U1<31U>
9	87-NF6-043-010		WINDOW,CD
10	87-NF6-036-010		KNOB,RTRY VOL
11	87-NF6-037-010		KNOB,RTRY MIC<30U,33LH>
12	87-NF7-026-010		KEY,DEMO H
13	87-085-185-010		BUSHING,AC CORD(E) CM-22B<33LH>
13	87-085-189-010		BUSHING,AC CORD(U) CM-22C<30U,31U>
⚠ 14	87-050-079-010		AC CORD ASSY,E BLK<33LH>
⚠ 14	87-050-053-010		AC CORD ASSY,U-2<30U,31U>
15	87-NF7-073-010		CABI,FR LH-HIGH<33LH>
15	87-NF7-002-010		CABI,FR U<30U>
15	87-NF7-007-010		CABI,FR U1<31U>
16	87-063-165-010		OIL-DMPR,150
17	87-NF7-021-010		KEY,CD
18	86-NF6-101-010		WINDOW,TOP UL
19	87-NF7-028-010		KEY,DSP<31U>
19	87-NF7-024-010		KEY,REC<30U>
19	87-NF7-081-010		KEY,REC HIGH<33LH>
20	87-NF7-025-010		KEY,PLAY<30U,31U>
20	87-NF7-029-010		KEY,PLAY REV<33LH>
21	87-NF7-022-010		KEY,FUNCTION
22	87-NF6-021-010		PANEL,TOP
23	87-NF7-044-010		CABI,REAR LHSTNM<33LH>
23	87-NF7-049-010		CABI,REAR U1STNM<31U>
23	87-NF7-042-010		CABI,REAR USTNM<30U>
24	87-NF6-025-010		KEY,POWER
25	87-NF6-034-010		KEY,KARAOKE
26	87-NF4-216-010		HLDR,LOCK 1
27	82-NF5-228-010		SPR-C,LOCK
28	82-NF5-229-010		PLATE,LOCK
29	87-NF4-217-010		HLDR,LOCK 2
30	82-NE6-067-010		BADGE,AIWA 30N
31	87-NF6-018-010		PANEL,TRAY E
32	87-NF6-022-010		PANEL,LEFT
33	87-NF6-023-010		PANEL,RIGHT
34	87-NF6-028-010		KEY,MIC<31U>
A	87-067-703-010		BVT2+3-10 W/0 SL0T
B	87-721-096-410		QT2+3-10 W/O SLOT
C	87-721-097-410		QT2+3-12 W/O SLOT
D	87-078-019-010		S-SCREW,IT+4-6 SWCH12A
E	87-067-688-010		BVTT+3-6
F	87-NF4-224-010		S-SCREW,IT3B+3-8 CU
G	87-723-096-410		QT2+3-10 W/O SLOT

TAPE MECHANISM EXPLODED VIEW 1 / 1 (2ZM-3MK2)

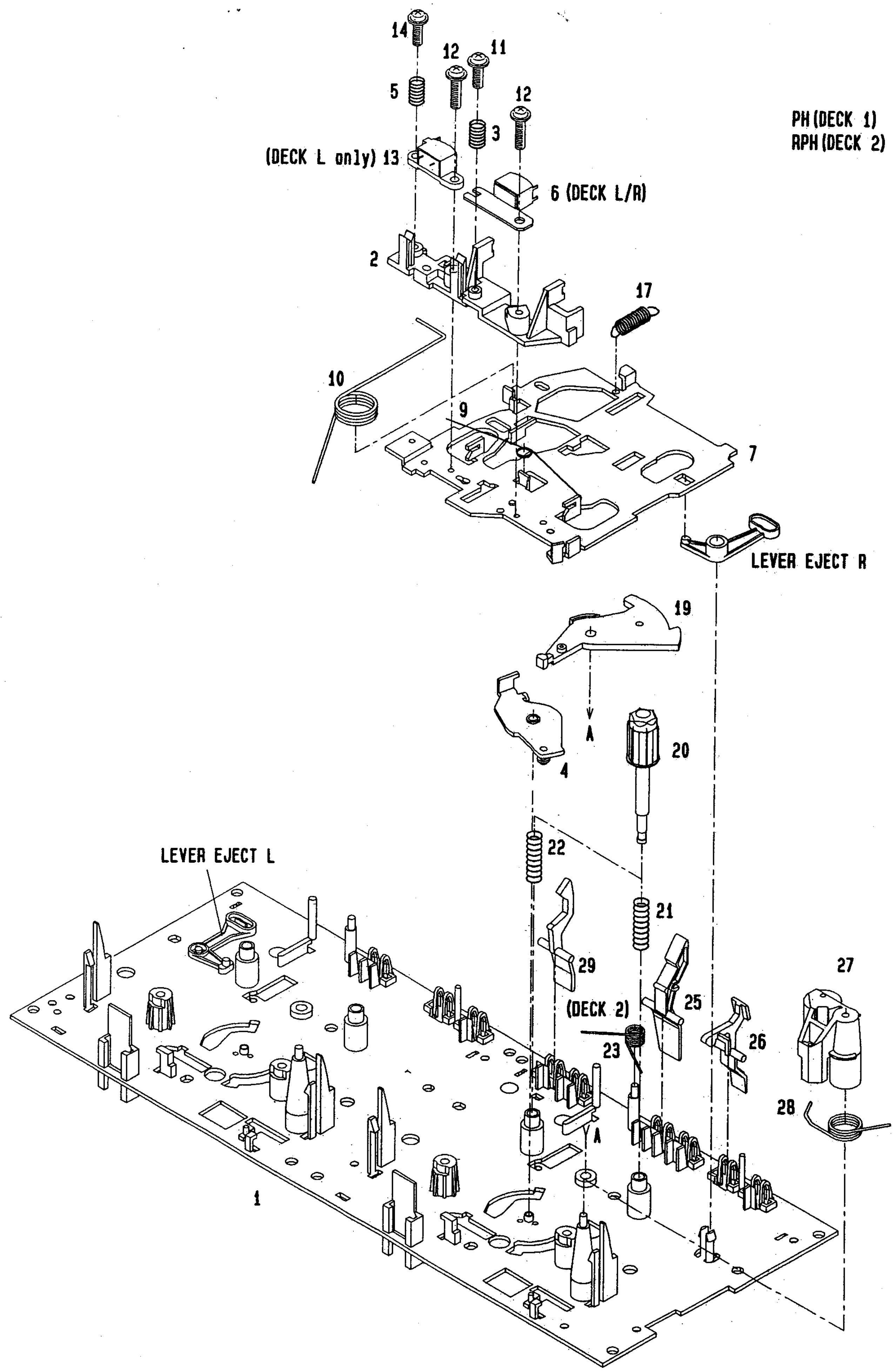


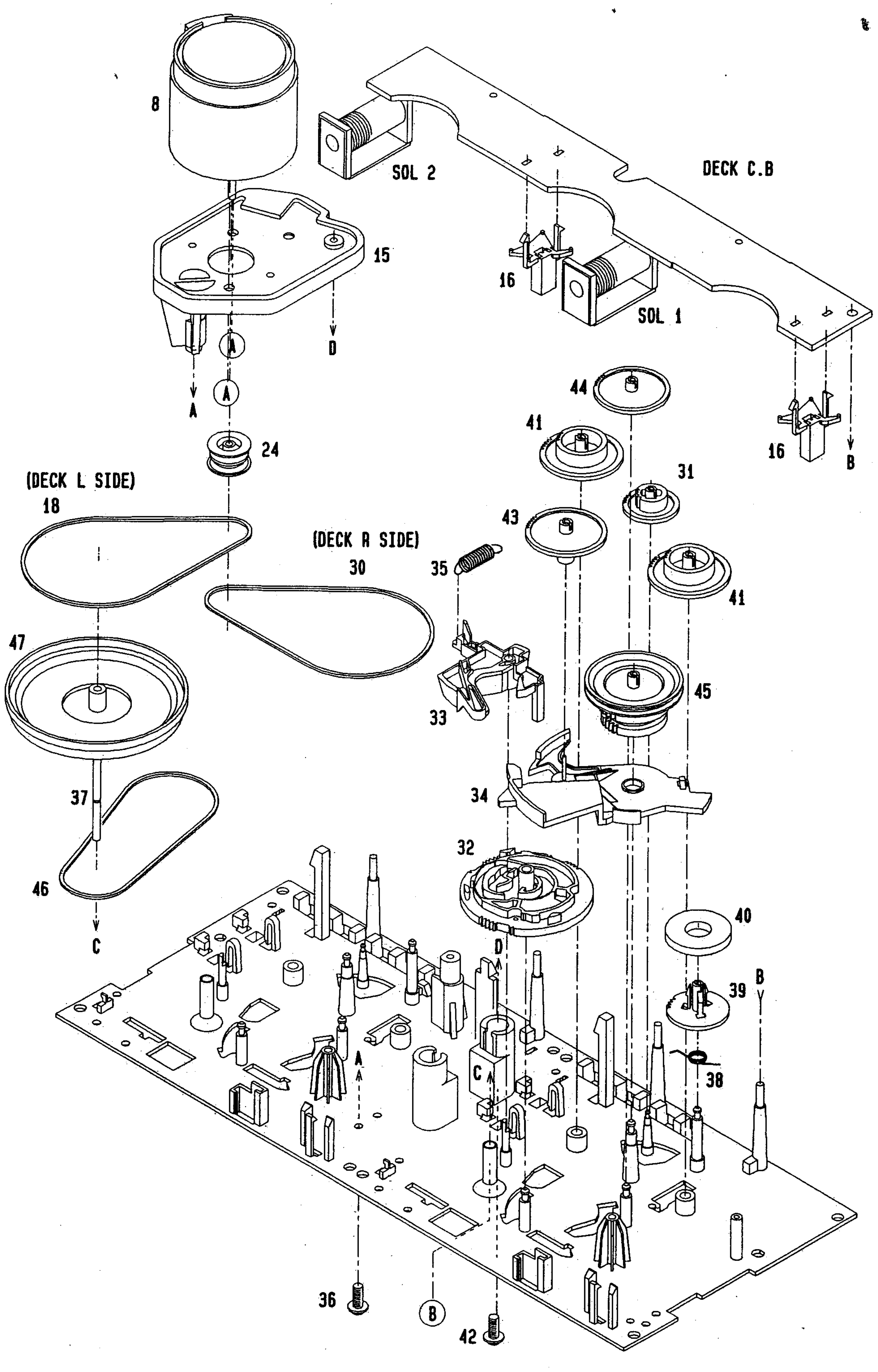
TAPE MECHANISM PARTS LIST 1 / 1 <2ZM3-MK2 PR4NM>

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	82-ZM3-301-519		CHAS ASSY,M2
2	82-ZM1-258-110		SPR-T,PINCH L
3	82-ZM1-341-110		LVR ASSY,PINCH L2
4	82-ZM1-333-010		PLATE,LINK 2
5	82-ZM1-266-11K		LVR,DIR
6	82-ZM1-214-010		SPR-T,DIR
7	82-ZM1-206-81K		CHAS,HEAD
8	82-ZM3-307-019		CUSH-G,DIA3.7-8-3.2
9	82-ZM1-269-219		SPR-T,BRG
10	82-ZM1-219-119		SPR-T,LINK
11	82-ZM1-210-119		GEAR,H T
12	82-ZM1-213-019		SPR-T,HEAD
13	82-ZM1-207-619		GUIDE,TAPE
14	86-ZM4-206-010		S-SCREW,AZIMUTH
15	82-ZM1-314-119		PLATE,HEAD
16	82-ZM1-208-119		HLDR,HEAD
17	82-ZM1-218-019		SPR-E,HB
18	82-ZM1-263-110		LVR,EJECT L (DECK 1)
18	82-ZM1-264-010		LVR,EJECT R (DECK 2)
19	82-ZM1-222-21K		LVR,PLAY
20	82-ZM1-217-319		REEL TABLE
21	82-ZM1-244-510		SPR-C,BT
22	82-ZM1-285-310		SPR-C,BT L
23	82-ZM1-257-019		SPR-T,CAS
24	82-ZM1-241-319		LVR,MC
25	82-ZM1-242-019		LVR,CAS
26	82-ZM1-243-019		LVR,STOP
27	82-ZM1-344-110		LVR ASSY,PINCH R2
28	82-ZM1-259-110		SPR-T,PINCH R
29	82-ZM1-240-11K		LVR,REC (DECK 2)
31	82-ZM1-255-319		SPR-E,LVR DIR
32	82-ZM3-305-01K		GEAR,CAM M2
33	82-ZM1-227-21K		LVR,TRIG
34	82-ZM3-306-11K		LVR,FR M2
35	82-ZM1-265-119		SPR-E,TRIG
36	82-ZM1-236-019		CAPSTAN N 2-41.5
37	82-ZM1-239-019		CAPSTAN N 2.2-41.7
38	82-ZM1-322-019		SPR-T,FR60
39	82-ZM1-220-219		GEAR,IDLER
40	82-ZM3-616-019		RING MAGNET 4
41	82-ZM1-216-31K		GEAR,REEL
42	87-A90-319-010		HEAD,PH HADKH2 FPC
42	87-A90-320-010		HEAD,RPH HADKH5 FPC
43	82-ZM1-225-21K		GEAR,FR
44	82-ZM1-226-019		GEAR,REW
45	82-ZM3-333-310		SLIP DISK ASSY 2
46	82-ZM1-338-010		BELT FR4
47	82-ZM1-349-110		FLY-WHL,R W(DECK 2)
47	82-ZM3-338-110		FLY-WHL,R3 W(DECK 1)
48	82-ZM1-348-010		FLY-WHL,L W(DECK 2)
48	82-ZM1-348-010		FLY-WHL,L W(DECK 1)
49	82-ZM3-329-210		BELT,SBU R2
50	82-ZM1-245-210		HLDR,IC
51	87-045-347-019		MOT,SHU2L 70(M1)
52	82-ZM3-221-010		PULLEY,MOT 2M
53	82-ZM1-288-019		SH,1.63-3.2-0.5 SLT
54	80-ZM6-243-019		SH,1.75-3.6-0.5 SLT
55	82-ZM3-335-210		PULLEY,COUPLER M3(DECK 1)
56	82-ZM3-337-010		BELT,SBU MOT 2
57	82-ZM3-339-010		SHAFT,COUPLER N3(DECK 1)
58	86-ZM1-206-010		BELT,MAIN L
59	82-ZM3-340-010		SH,BELT D2
A	85-ZM3-202-010		S-SCREW,TG
B	80-ZM6-207-019		V+1.6-7
C	82-ZM3-318-019		S-SCRW MOTOR M2
D	87-B10-043-010		W-P,0.99-4-0.25 SLT
E	82-ZM3-334-010		PW,2.16-6-0.4

TAPE MECHANISM EXPLODED VIEW 1 / 1 (6ZM-3)


14
12
11
5
12
3
(DECK L only) 13
6 (DECK L/R)
PH(DECK 1)
RPH(DECK 2)
2
17
10
9
7
LEVER EJECT R
19
4
A
20
22
21
LEVER EJECT L
29
25
(DECK 2)
23
26
27
28
A
1

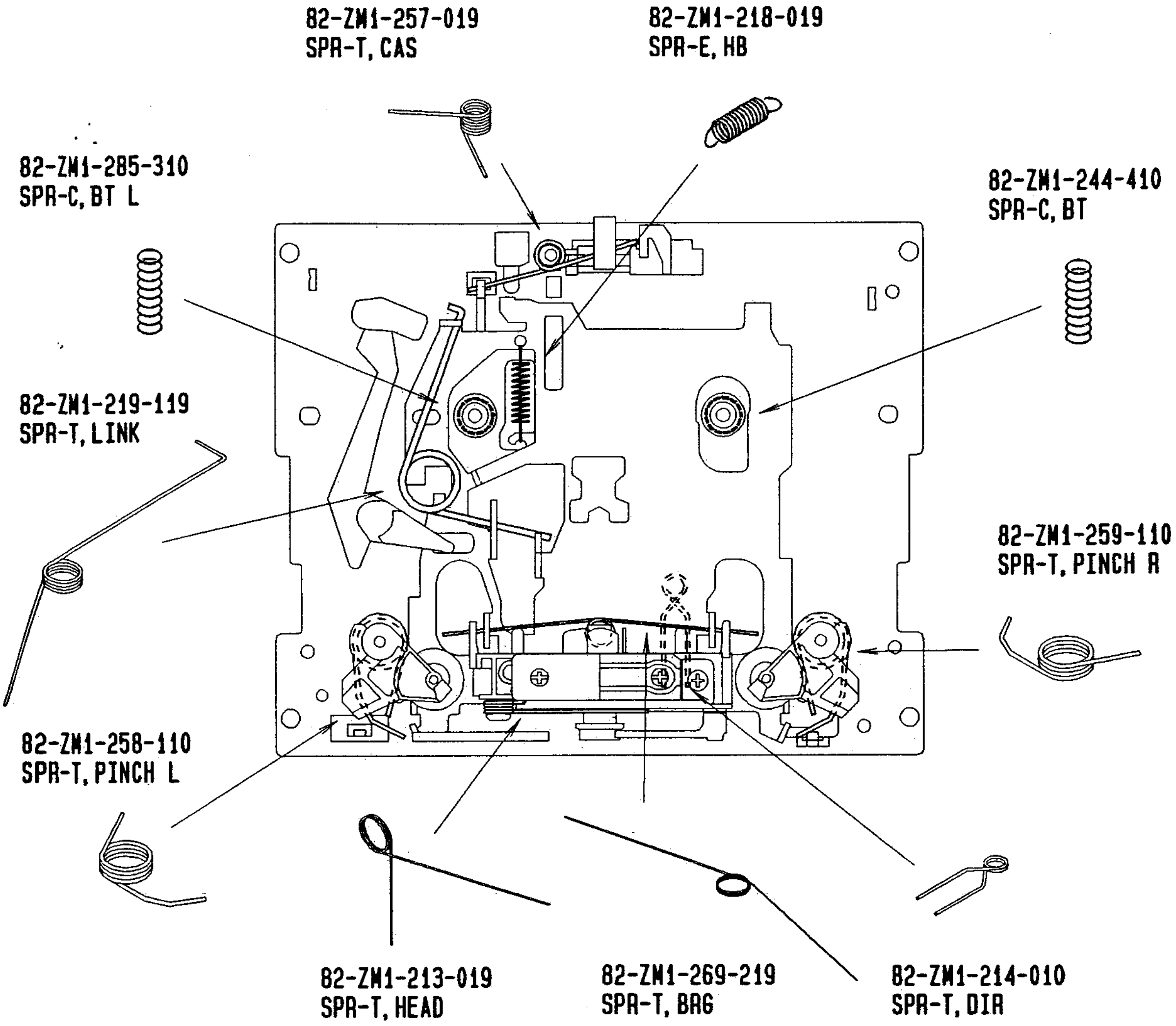

8
SOL 2
DECK C.B
15
16
SOL 1
A
A
A
D
24
(DECK L SIDE)
18
44
41
31
16
B
(DECK R SIDE)
30
43
35
41
47
33
45
34
37
32
46
C
40
D
39
B
C
38
36
B
42

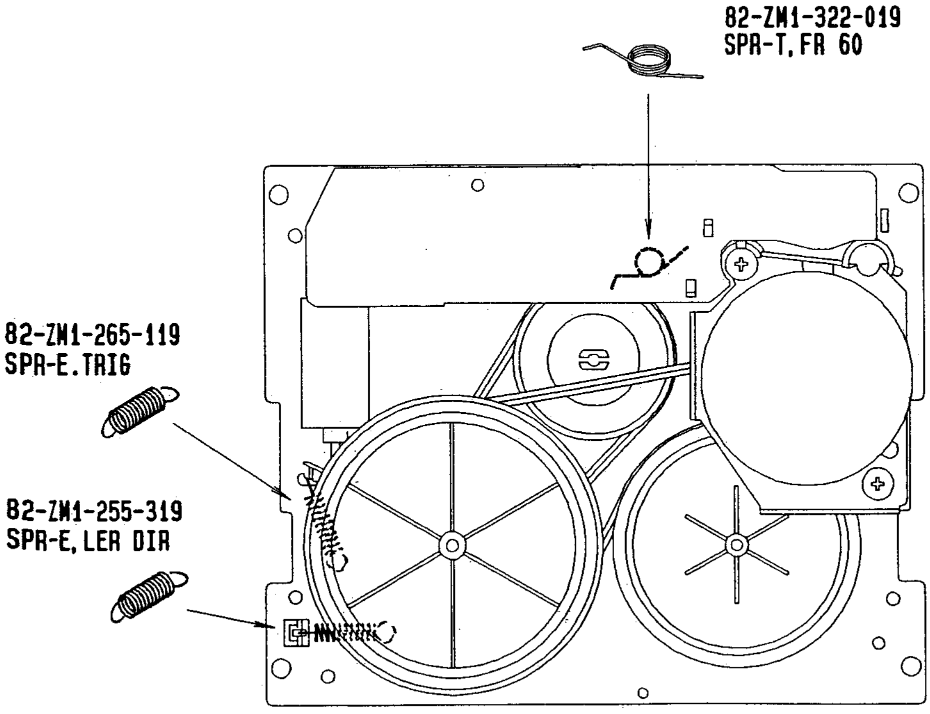
TAPE MECHANISM PARTS LIST 1 / 1 <6ZM-3 PR1NM>

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

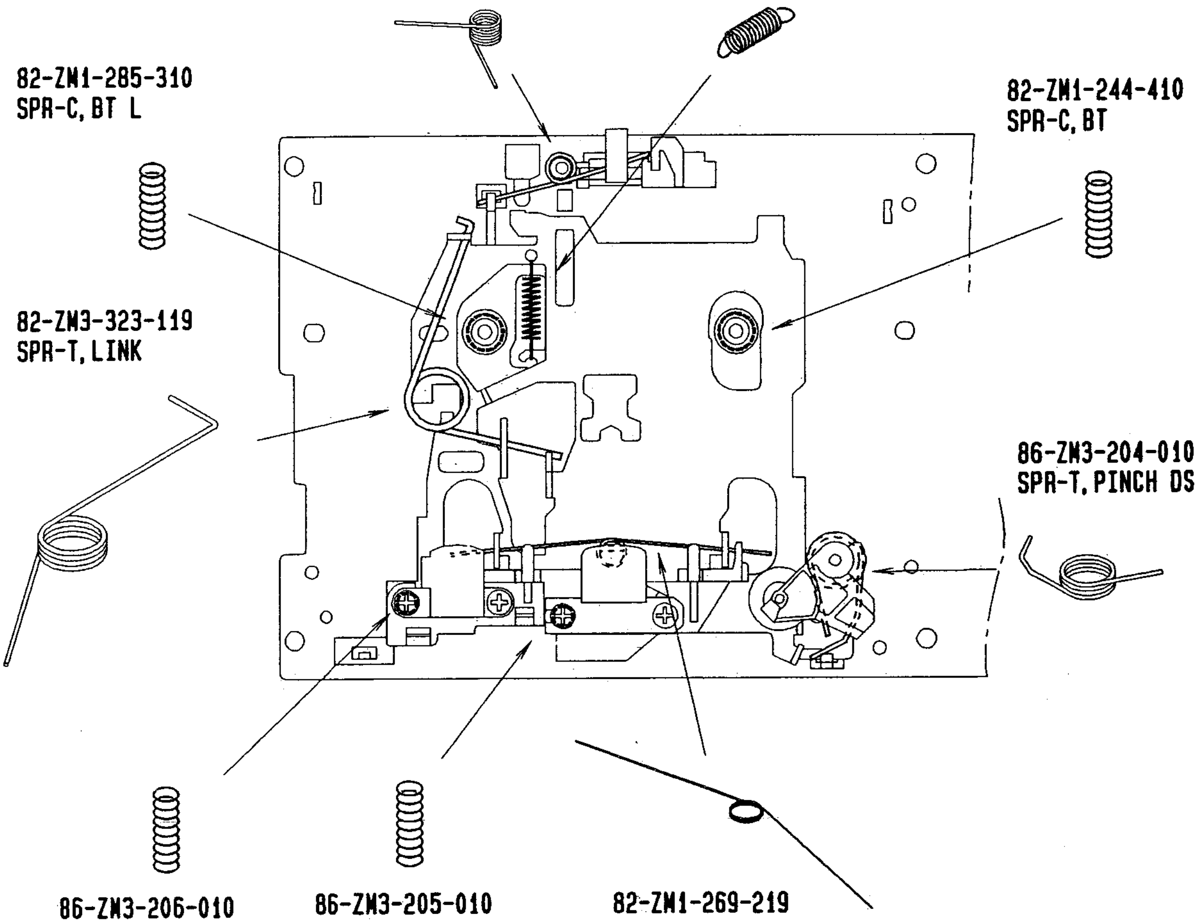
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-ZM3-212-010		CHAS ASSY,SS
2	86-ZM3-202-010		BASE,HEAD S
3	86-ZM3-205-010		SPR-C,RPH S
4	82-ZM1-333-210		PLATE,LINK 2
5	86-ZM3-206-010		SPR-C,EH S
6	87-A90-403-019		HEAD,RPH MS15R
7	86-ZM3-201-010		CHAS,HEAD S
8	87-045-347-019		MOT,SHU2L 70(M1)
9	82-ZM1-269-219		SPR-T,BRG
10	82-ZM3-323-119		SPR-T,LINK
11	86-ZM3-209-010		S-SCREW,ASIMUTHS
12	86-ZM3-207-010		S-SCREW,RPH
13	87-A90-404-019		HEAD,EH LE15B
14	86-ZM3-208-010		S-SCREW,EH
15	86-ZM3-203-010		HLDR,MOTS
16	82-ZM1-245-210		HLDR,IC
17	82-ZM1-218-019		SPR-E,HB
18	82-ZM3-329-210		BELT,SBU R2
19	82-ZM1-222-219		LVR,PLAY
20	82-ZM1-217-419		REEL TABLE
21	82-ZM1-244-519		SPR-C,BT
22	82-ZM1-285-410		SPR-C,BT L
23	82-ZM1-257-019		SPR-T,CAS
24	82-ZM3-221-010		PULLEY,MOT 2M
25	82-ZM1-242-019		LVR,CAS
26	82-ZM1-243-019		LVR,STOP
27	82-ZM1-344-119		LVR ASSY,PINCH
28	86-ZM3-204-010		SPR-T,PINCHDS
29	82-ZM1-240-119		LVR,REC (DECK 2)
30	82-ZM3-328-110		BELT,SBU P2
31	82-ZM1-223-010		GEAR,PLAY
32	82-ZM3-305-019		GEAR,CAM M2
33	82-ZM1-227-319		LVR,TRIG
34	82-ZM3-306-110		LVR,FR M2
35	82-ZM1-265-119		SPR-E,TRIG
36	85-ZM3-203-019		S-SCREW MOTOR M3
37	82-ZM1-236-019		CAPSTAN N 2-41.5
37	82-ZM1-239-019		CAPSTAN N 2.2-41.7
38	82-ZM1-322-019		SPR-T,FR60
39	82-ZM1-220-219		GEAR,IDLER
40	82-ZM3-616-019		RING MAGNET 4
41	82-ZM1-216-319		GEAR,REEL
42	85-ZM3-213-010		S-SCREW,HLDR,MOT 3
43	82-ZM1-225-219		GEAR,FR
44	82-ZM1-226-019		GEAR,REW
45	82-ZM3-333-210		SLIP DISK ASSY 2
46	82-ZM1-338-010		BELT FR4
47	82-ZM1-349-019		FLY-WHL RW (DECK L)
47	82-ZM3-331-019		FLY-WHL R2W (DECK R)
A	87-251-071-417		U+2.6-4
B	80-ZM6-243-019		SH,1.75-3.6-0.5 SLT

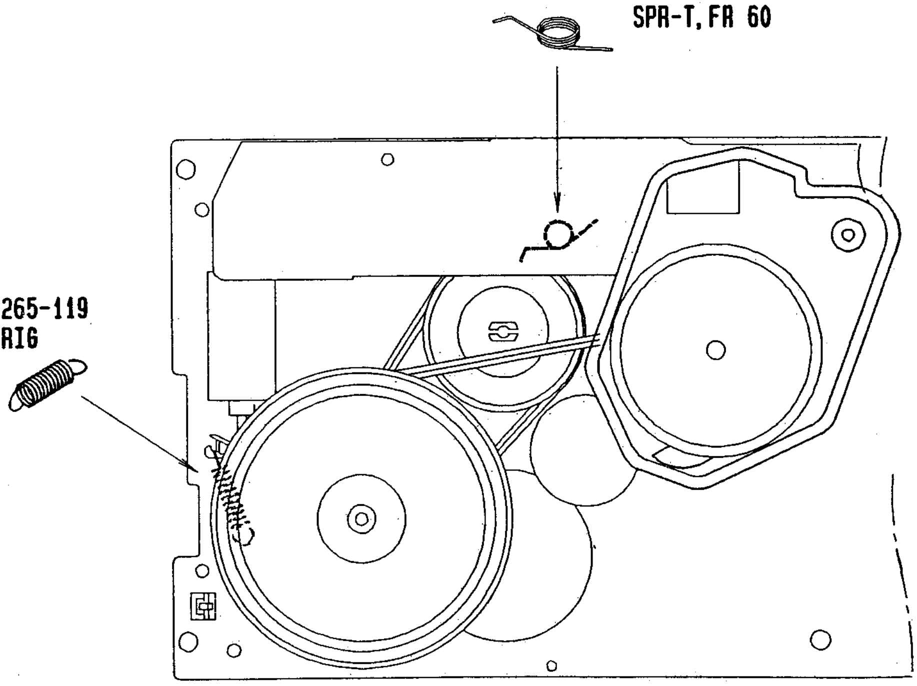
SPRING APPLICATION POSITION (2ZM-3 MK2)


82-ZM1-257-019
SPR-T, CAS
82-ZM1-218-019
SPR-E, HB
82-ZM1-285-310
SPR-C, BT L
82-ZM1-244-410
SPR-C, BT
82-ZM1-219-119
SPR-T, LINK
82-ZM1-259-110
SPR-T, PINCH R
82-ZM1-258-110
SPR-T, PINCH L
82-ZM1-213-019
SPR-T, HEAD
82-ZM1-269-219
SPR-T, BRG
82-ZM1-214-010
SPR-T, DIR


82-ZM1-322-019
SPR-T, FR 60
82-ZM1-265-119
SPR-E. TRIG
82-ZM1-255-319
SPR-E, LER DIR

SPRING APPLICATION POSITION (6ZM-3)


82-ZM1-257-019
SPR-T, CAS
82-ZM1-218-019
SPR-E, HB
82-ZM1-285-310
SPR-C, BT L
82-ZM1-244-410
SPR-C, BT
82-ZM3-323-119
SPR-T, LINK
86-ZM3-204-010
SPR-T, PINCH DS
86-ZM3-206-010
SPR-C, EH S
86-ZM3-205-010
SPR-C, RPH S
82-ZM1-269-219
SPR-T, BRG

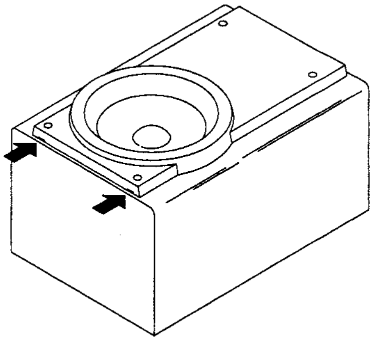

82-ZM1-322-019
SPR-T, FR 60
82-ZM1-265-119
SPR-E, TRIG

SPEAKER DISASSEMBLY INSTRUCTION (SX–NA34 / SX–NS33 / SX–FNA51)

Type.1

矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットのビスを取り、スピーカーユニットを外してください。

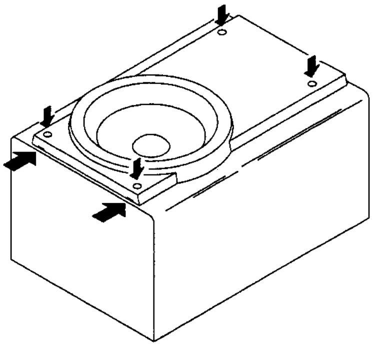
Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit andthen remove the speaker units.



Type.2

グリルフレームを外し、4個のゴムキャブをマイナスドライバーで端の方から持ち上げて外すと中にビスが有りますので、ビスを取り外します。矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットのビスを取り、スピーカーユニットを外してください。

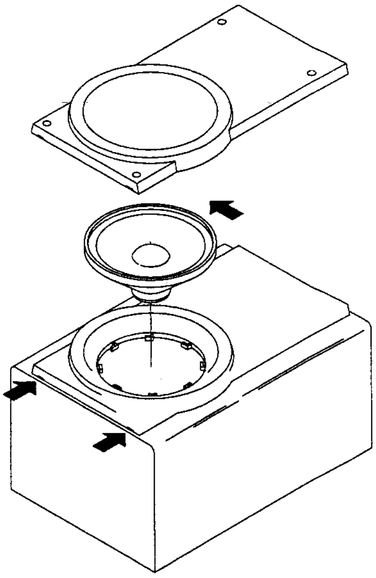
Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver. Remove the screws from hold where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



Type.3

矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットの凹にマイナスドライバーを差し込んで、反時計方向に回転させスピーカーユニットを外してください。スピーカーユニット交換後は時計方向にクリック音がするまで、回転させて取り付けます。

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Turn the speaker unit to counter-clockwise direction while inserting a flat-bladed screwdriver into one of the hollows arround speaker unit, and then remove the speaker unit. After replacing the speaker unit, install it turnning to clockwise direction unit "click" sound comes out.



SPEAKER PARTS LIST (SX–NS33 / SX–NA34)

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NSH-001-019		PANEL,FR R
2	87-NSH-002-019		PANEL,FR L
3	87-NSH-005-019		NET
4	87-NS7-602-019		SPKR,W 140
5	87-NS7-610-019		SPKR,W 60
6	87-NS7-611-019		CORD,SPKR

SPEAKER PARTS LIST (SX–FNA51)

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NSE-001-019		PANEL,FR
2	87-NS6-014-019		HLDR,SQ
3	87-NS6-005-019		PROTECTOR,R
4	87-NS6-006-019		PROTECTOR,L
5	86-NS5-606-019		SPKR,60
6	85-NS6-611-019		SPKR CORD,Y/B
7	87-NS4-611-019		SPKR CORD
8	87-NS6-007-019		GRILLE,FRAME ASSY
9	86-NSA-602-019		SPKR,W 160
10	86-NS5-604-019		SPKR,T 80
11	87-NS4-610-019		SPKR,CODE Y/B
12	87-NS6-601-019		SPKR,CODE

ACCESSORIES / PACKAGE LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NF7-902-010		IB,LH(ES)M<33LH>
1	87-NF7-903-010		IB,U(ESF)M<30U>
1	87-NF7-911-010		IB,U(ESF)M-31<31U>
2	87-006-225-010		ANT,LOOP ANT NC2
3	87-A90-064-010		FEEDER-ANT,FM (SHS)
⚠ 4	87-A90-312-010		PLUG,CONVERSION WTN-1157R1<33LH>
5	87-NF6-630-010		RC UNIT,RC-7AS06

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
G—　—	
G—　—	
G—　—	

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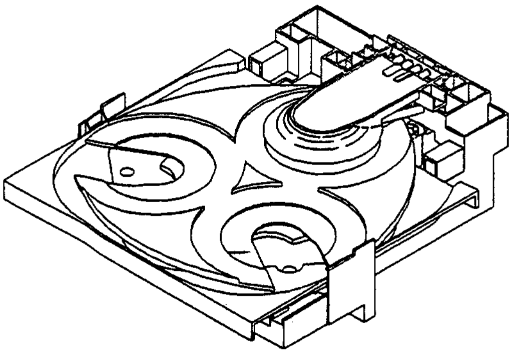
V18295

4ZG-1Z

SERVICE MANUAL



CD MECHANISM

- BASIC CD MECHANISM: KSM-2 131 BAM / 3ZG-2C7N

•TYPE: English,Japanese

BASIC NAME	DERIVATION NAME							
4ZG-1Z	1D	2D	1MD	–		–	–	–

S/M Code No. 09-973-187-50T (Service Manual)
S/M Code No. 09-984-270-60T (Correction)

S/M Code No. 09-973-187-50T

安全に修理(補修)をするために

修理の前に「安全に修理(補修)をするために」をよくお読みの上、正しく修理を行ってください。このサービスマニュアルでは、お客様が製品を安全に正しくお使いいただき、お客様や他の人々への危害や財産への損害を未然に防止するために、修理する場合必ず下記の項目をお守りください。

⚠警告

警告に示された次の内容を必ずお守りください。

☞もし守られないと、火災や感電、けがなどの重度の損害を負う原因となります。

1.⚠安全規格部品注意文

・製品の安全性を維持する為の重要部品で、安全上特別な規格で作られています。
このマークの部品を交換する時は必ず指定の部品を使用してください。

2.指定部品を使用すること。

セットの部品は難燃性や耐電圧など安全上の特性を持ったものとなっています。従って交換部品は、使用されていたものと同じ特性の部品を使用すること。特に回路図、部品表に⚠印で指定されている安全上重要な部品は必ず指定のものをご使用ください。

3.電源コードを含むＡＣ1次側のリード線の被覆を傷つけたり、溶かしたりしないこと。

4.感電に注意すること。

内部には高電圧の部分がありますので通電時の取り扱いに際しては注意してください。

5.次の各項目は修理前と必ず同じであること。

1）ワイヤーの半田付け状態（特にＡＣ1次側の空間距離）
2）ワイヤーの引き回しおよび束線状態等
3）ワイヤーの種類
4）各種絶縁物の取付状態

7.部品の取り付けや配線の引き回しはもとどおりにすること。

安全上、チューブやテープなどの絶縁材料を使用したり、プリント基板から浮かしてとりつけた部品があります。また、内部配線は引き回しやクランパーによって発熱部品や高圧部品に接近しないよう配慮されていますので、これらは必ずもとどおりにすること。

⚠注意

この表示を無視して、誤った取り扱いをすると、人が傷害を負ったり物的損害が発生する可能性があります。

1.注意事項を守ること。

サービスの時特に注意を要する箇所につきましては、キャビネット、シャーシ、部品などにラベルや捺印で注意事項を表示しています。これらの注意書きおよび取扱説明書等の注意事項を必ず守ること。

2.スペック銘板・注意ラベル・ヒューズラベル等の表示文字を汚して読みにくくならないこと。

3.基板パターンの裏付け部品の修理等を行う場合、パターンや部品にボンドを塗布してプリント基板にしっかり固定すること。

4.サービス後は安全点検すること。

サービスのために取り外したネジ、部品、配線がもとどおりになっているか、サービスした個所の周辺を劣化させてしまったところがないかなどを点検すること。（ワイヤーの半田付け、引き回し、束線、種類、空間距離）

5.修理（補修）時に、レーザー出力部に接近しないでください。やむなく接近する場合は、目を閉じてください。レーザービームに接近することが必要になった場合、光学ピックアップブロックの対物レンズの表面から30cm以上離れていることを確認してください。

ギヤ、メインカムの位相の合わせ方

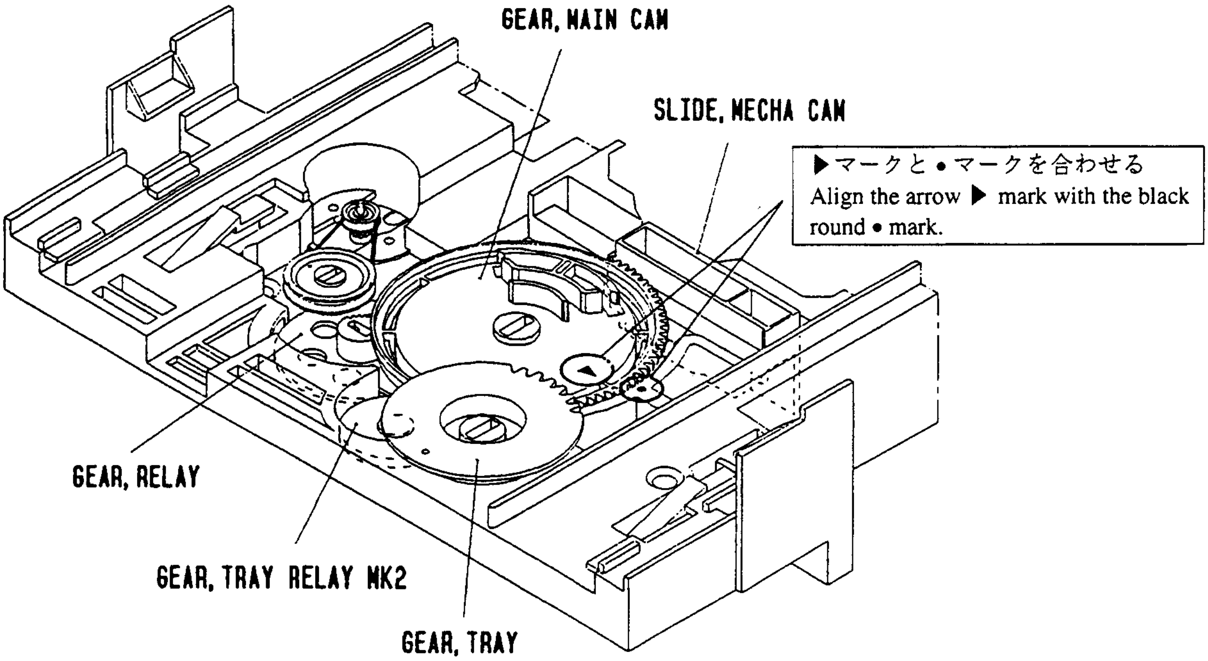
1) CHAS, MECHのツメを下側に押し、TRAYを外す。
2) 下図の様にGEAR, MAIN CAMの矢印とCHAS, MECHAの点印を合わせる。
3) SLIDE, MECH CAMが右側の位置にある事を確認し、TRAYをゆっくり挿し込んで下さい。

注意: GEAR, MAIN CAMの位相がズレている場合、チャッキング及びトレーが誤動作を起こします。

How to Adjust the Rotating Phase of the Gear, Main Cam

1) Push down the hooking catch of the CHAS. MECH, and remove the TRAY.
2) Align the arrow mark of the Gear, Main Cam with the black round mark of the CHAS, MECHA as shown below.
3) Confirm that the Slide, Mech Cam is located in the right position, then insert the TRAY gently.

Caution: If the rotating phase of the Gear, Main Cam is incorrectly adjusted, the chucking operation and tray movement will have malfunction.



▶マークと●マークを合わせる
Align the arrow ▶ mark with the black round ● mark.

光学ブロック (KSS-213B) 交換時の注意

光学系ブロック内のレーザーダイオードは、衣服や人体に帯電した静電荷等で電位差を生じることにより、静電破壊することがあります。人体アース、作業台のアースをとり、衣服が触れぬよう注意して下さい。

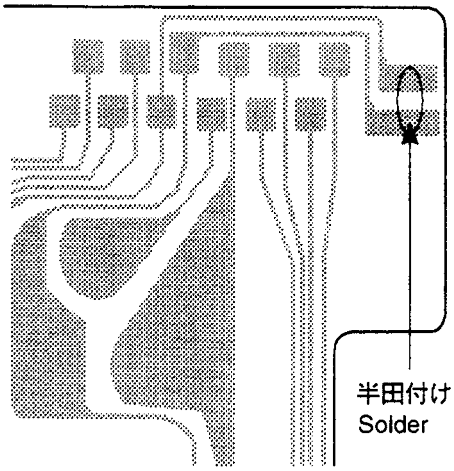
1) コネクターを接続後、右図に示すハンダ付けを取り除いて下さい。

Precaution to replace Optical block (KSS-213B)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the right figure.

PICK-UP Assy P.C.B



ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

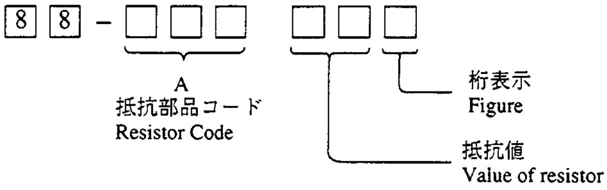
REF. NO	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-A20-446-010	1E	C-IC,LA9241ML
	87-A20-459-010	2A	C-IC,LC78622ED
	87-A20-445-010	1F	IC,BA5936
TRANSISTOR			
	87-A30-066-080	0E	TR,2SA1175FE
	87-A30-076-080	0E	C-TR,2SC3052F
	87-A30-047-080	0E	TR,CSD655E
	87-026-609-080	0E	TR,KTA1266GR
	87-A30-073-080	0E	C-TR,RT1N 141C
	87-A30-039-040	0E	C-TR,2SD1383K<1MD>
DIODE			
	87-002-564-080	0E	DIODE,1SS133-RA
3CD C.B			
	84-ZG1-244-210	1A	CABI,OPTICAL
C11	87-012-393-080	0E	C-CAP,S 0.22-16 K W5R CM/CB
C12	87-012-157-080	0E	C-CAP,S 330P-50 J CH GRM
C13	87-016-369-080	0E	C-CAP,S 0.033-25 K B
C14	87-A10-201-080	0E	C-CAP,S 0.33-16 K B
C15	87-010-590-080	0E	C-CAP,S 0.015-16 K R
C16	87-016-369-080	0E	C-CAP,S 0.033-25 K B
C17	87-010-181-080	0E	C-CAP,S 1800P-50 K B
C18	87-016-369-080	0E	C-CAP,S 0.033-25 K B
C19	87-010-198-080	0E	C-CAP,S 0.022-25 K B
C20	87-010-178-080	0E	C-CAP,S 1000P-50 K B
C21	87-012-393-080	0E	C-CAP,S 0.22-16 K W5R CM/CB
C22	87-016-083-080	0E	C-CAP,S 0.15-16 K R
C23	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C24	87-010-186-080	0E	C-CAP,S 4700P-50 K B
C25	87-010-400-040	0E	CAP,E 0.47-50 SME
C26	87-010-322-080	0E	C-CAP,S 100P-50 J CH
C27	87-010-382-040	0E	CAP,E 22-25 SME
C28	87-010-403-040	0E	CAP,E 3.3-50 SME
C29	87-010-184-080	0E	C-CAP,S 3300P-50 K B
C30	87-010-146-080	0E	C-CAP,S 2P-50 C CH GRM
C31	87-010-186-080	0E	C-CAP,S 4700P-50 K B
C32	87-010-152-080	0E	C-CAP,S 8P
C33	87-016-081-080	0E	C-CAP,S 0.1-16 K R
C35	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C37	87-010-405-080	0E	CAP,E 10-50 M SME
C38	87-010-263-080	0E	CAP,E 100-10 SME
C39	87-016-369-080	0E	C-CAP,S 0.033-25 K B
C40	87-010-401-080	0E	CAP,E 1-50 M SME
C41	87-A10-201-080	0E	C-CAP,S 0.33-16 K B
C42	87-010-263-080	0E	CAP,E 100-10 SME
C43	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C44	87-010-263-080	0E	CAP,E 100-10 SME
C46	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C47	87-010-260-080	0E	CAP,E 47-25 SME
C48	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C49	87-010-404-080	0E	CAP,E 4.7-50 M SME
C50	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C51	87-010-263-040	0E	CAP,E 100-10 M SME
C101	87-016-081-080	0E	C-CAP,S 0.1-16 K R
C102	87-016-081-080	0E	C-CAP,S 0.1-16 K R
C103	87-010-321-080	0E	C-CAP,S 82P-50 J CH
C104	87-012-154-080	0E	C-CAP,S 150P-50 J CH GRM
C105	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C109	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C111	87-010-312-080	0E	C-CAP,S 15P
C112	87-010-154-080	0E	C-CAP,S 10P-50 D CH

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C113	87-010-322-080	0E	C-CAP,S 100P-50 J CH
C115	87-010-404-080	0E	CAP,E 4.7-50 M SME
C116	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C117	87-010-263-040	0E	CAP,E 100-10 M SME
C118	87-010-178-080	0E	C-CAP,S 1000P-50 K B
C119	87-010-154-080	0E	C-CAP,S 10P-50 D CH
C121	87-010-405-080	0E	CAP,E 10-50 M SME
C122	87-010-405-080	0E	CAP,E 10-50 M SME
C123	87-012-157-080	0E	C-CAP,S 330P-50 J CH GRM
C124	87-012-157-080	0E	C-CAP,S 330P-50 J CH GRM
C131	87-010-382-080	0E	CAP,E 22-25 M SME
C191	87-010-263-040	0E	CAP,E 100-10 M SME
C301	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C302	87-010-382-080	0E	CAP,E 22-25 M SME
C501	87-010-381-080	0E	CAP,E 330-16 SME
C502	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C504	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C505	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C506	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C507	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C509	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C510	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C603	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C610	87-010-405-080	0E	CAP,E 10-50 M SME
C611	87-010-405-080	0E	CAP,E 10-50 M SME
C701	87-010-405-080	0E	CAP,E 10-50 M SME
C705	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C706	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C711	87-010-322-080	0E	C-CAP,S 100P-50 J CH
C712	87-010-322-080	0E	C-CAP,S 100P-50 J CH
C713	87-010-322-080	0E	C-CAP,S 100P-50 J CH
C721	87-010-322-080	0E	C-CAP,S 100P-50 J CH
C901	87-010-260-080	0E	CAP,E 47-25 SME
C902	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
CON3	84-ZG1-648-010	1A	CONN ASSY,6P<1MD,1D>
FC1	85-NFT-611-110	1A	FF-CABLE 16P-1.0
FC4	84-ZG1-614-210	1A	F-CABLE,5P 1.25 210MM
FC5	84-ZG1-630-010	0E	CABLE FFC 6P-1.25<2D>
L11	87-005-602-080	0E	COIL,10UH J LAV35
L101	87-005-614-080	0E	COIL,100UH
L102	87-005-602-080	0E	COIL,10UH J LAV35
LED901	87-A40-123-010	0E	LED,SLZ-8128A-01-B
M601	87-045-305-010	1D	MOT,RF-500TB
SW701	87-036-109-010	0E	SW,MICRO SPPB61
SW702	87-036-109-010	0E	SW,MICRO SPPB61
X101	87-A70-046-010	--	VIB,XTAL 16.934MHZ
LED C.B			
LED701	87-A40-316-080	0E	LED,SLR-56PCT31 GRN
LED702	87-A40-268-080	0E	LED,SLH-56DCT31 ORN
LED703	87-A40-268-080	0E	LED,SLH-56DCT31 ORN
LED704	87-A40-316-080	0E	LED,SLR-56PCT31 GRN
T-T C.B			
C401	87-018-214-080	0E	CAP,TC U 0.1-50 Z F SA
M401	87-045-364-010	1D	MOT,BCH3B
PS401	87-026-573-010	1B	SNSR,PHOTO GP1S53
MOTOR C.B<1MD,1D>			
M2	9X-262-513-210	2M	SLED MOTOR ASSY<1MD,1D>
PIN3	91-564-722-110	1C	CONNECTOR 6P<1MD,1D>
SW1	91-572-085-110	1B	LEAF SW<1MD,1D>

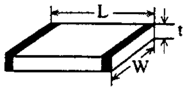
REF. NO	PART NO.	カンリ NO.	DESCRIPTION
DRIVE C.B<2D>			
M1	87-045-358-010	1F	MOT,RF-310TA 43<2D>
M2	87-045-356-010	1F	MOT,RF-310TA 30<2D>
SW1	87-A90-042-010	0E	SW,LEAF MSW-17310MVPO<2D>

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

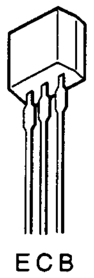
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding


8 8 - □□□ □□□
A
抵抗部品コード
Resistor Code
桁表示
Figure
抵抗値
Value of resistor

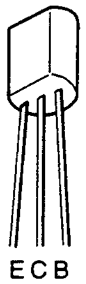
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード :A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

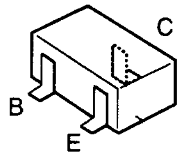
TRANSISTOR ILLUSTRATION



2SA1175

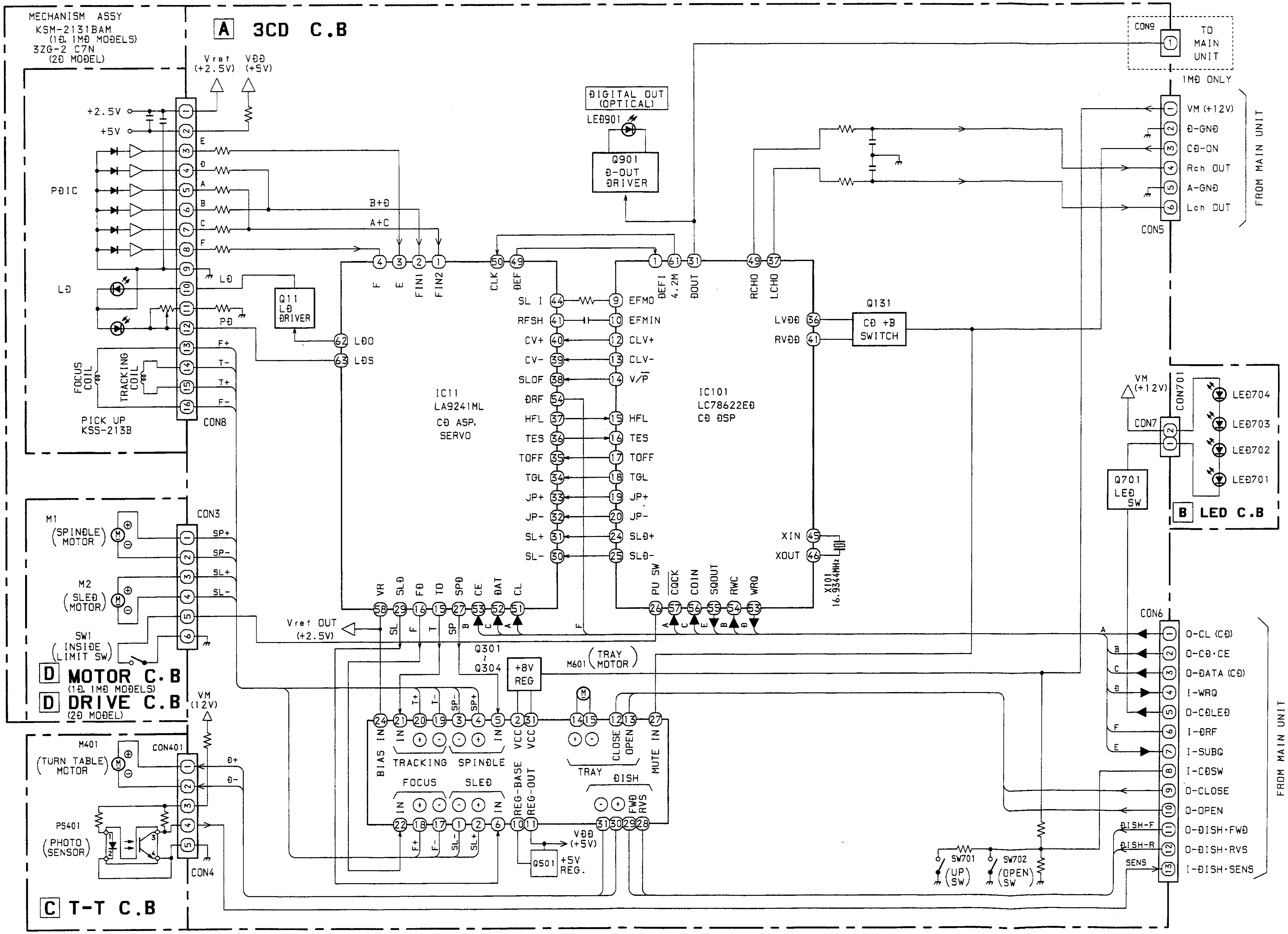


CSD655
KTA1266

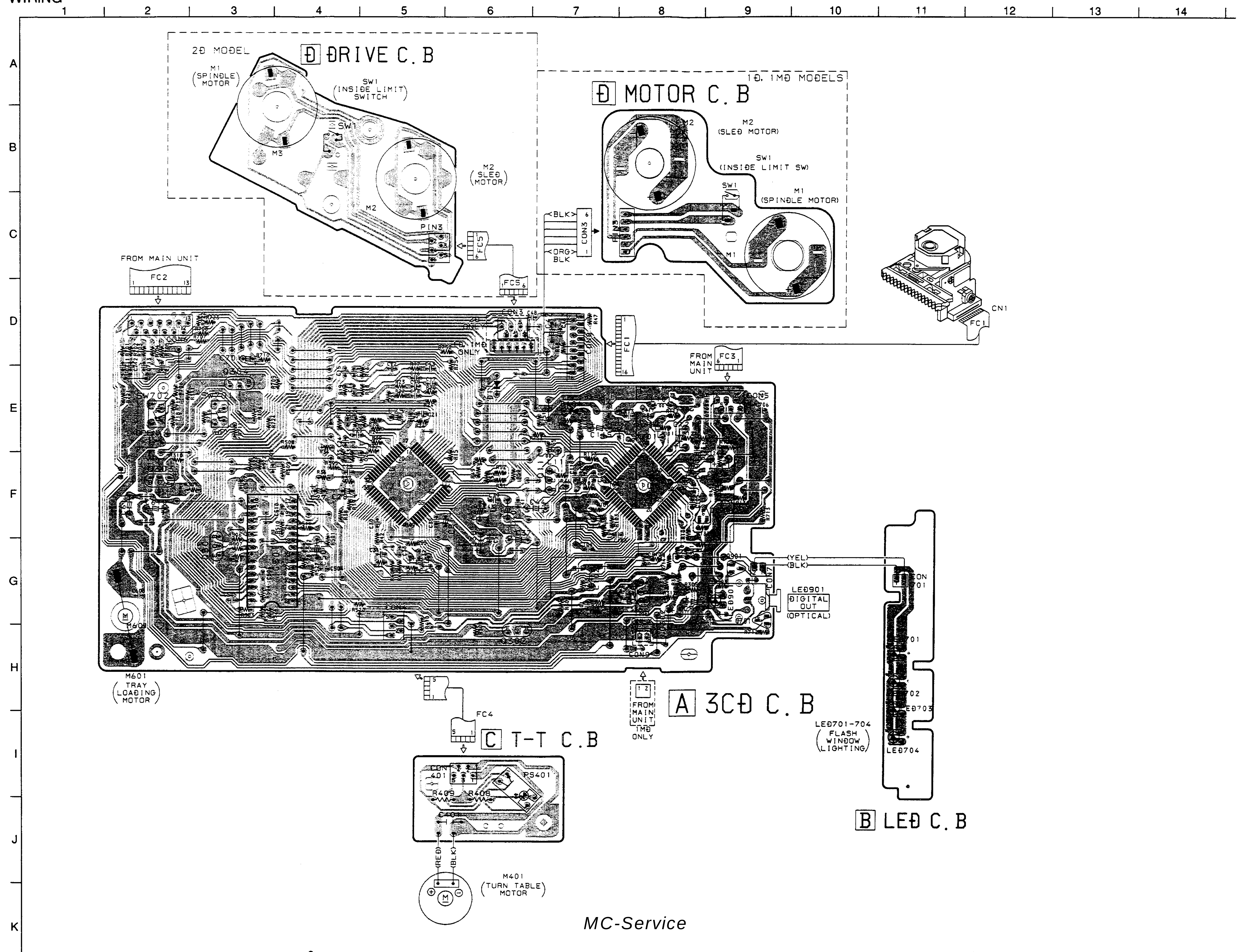


2SC3052
2SD1383
RT1N141C

BLOCK DIAGRAM


MECHANISM ASSY
KSM-2131BAM
(1D, 1MD MODELS)
3ZG-2 C7N
(2D MODEL)
A 3CD C.B
Vref (+2.5V)
VDD (+5V)
PDIC
LD
FOCUS COIL
TRACKING COIL
PICK UP KSS-213B
CON8
Q11 LD DRIVER
DIGITAL OUT (OPTICAL)
LED901
Q901 D-OUT DRIVER
IC11 LA9241ML CD ASP. SERVO
IC101 LC78622ED CD DSP
Q131 CD +B SWITCH
X101 16.9344MHz
CON9
TO MAIN UNIT
1MD ONLY
CON5
VM (+12V)
D-GND
CD-ON
Rch OUT
A-GND
Lch OUT
FROM MAIN UNIT
CON701
CON7
LED704
LED703
LED702
LED701
Q701 LED SW
B LED C.B
CON6
O-CL (CD)
O-CD·CE
O-DATA (CD)
I-WRQ
O-CDLED
I-DRF
I-SUBQ
I-CDSW
O-CLOSE
O-OPEN
O-DISH·FWD
O-DISH·RVS
I-DISH·SENS
SW701 (UP SW)
SW702 (OPEN SW)
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
CON3
D MOTOR C.B
(1D, 1MD MODELS)
D DRIVE C.B
(2D MODEL)
M401 (TURN TABLE MOTOR)
PS401 (PHOTO SENSOR)
CON401
CON4
C T-T C.B
Vref OUT (+2.5V)
Q301 ~ Q304
+8V REG
M601 (TRAY MOTOR)
TRACKING
SPINDLE
FOCUS
SLED
TRAY
DISH
BIAS IN
MUTE IN
REG-BASE
REG-OUT
Q501 +5V REG.
VDD (+5V)
VM (12V)

WIRING


1
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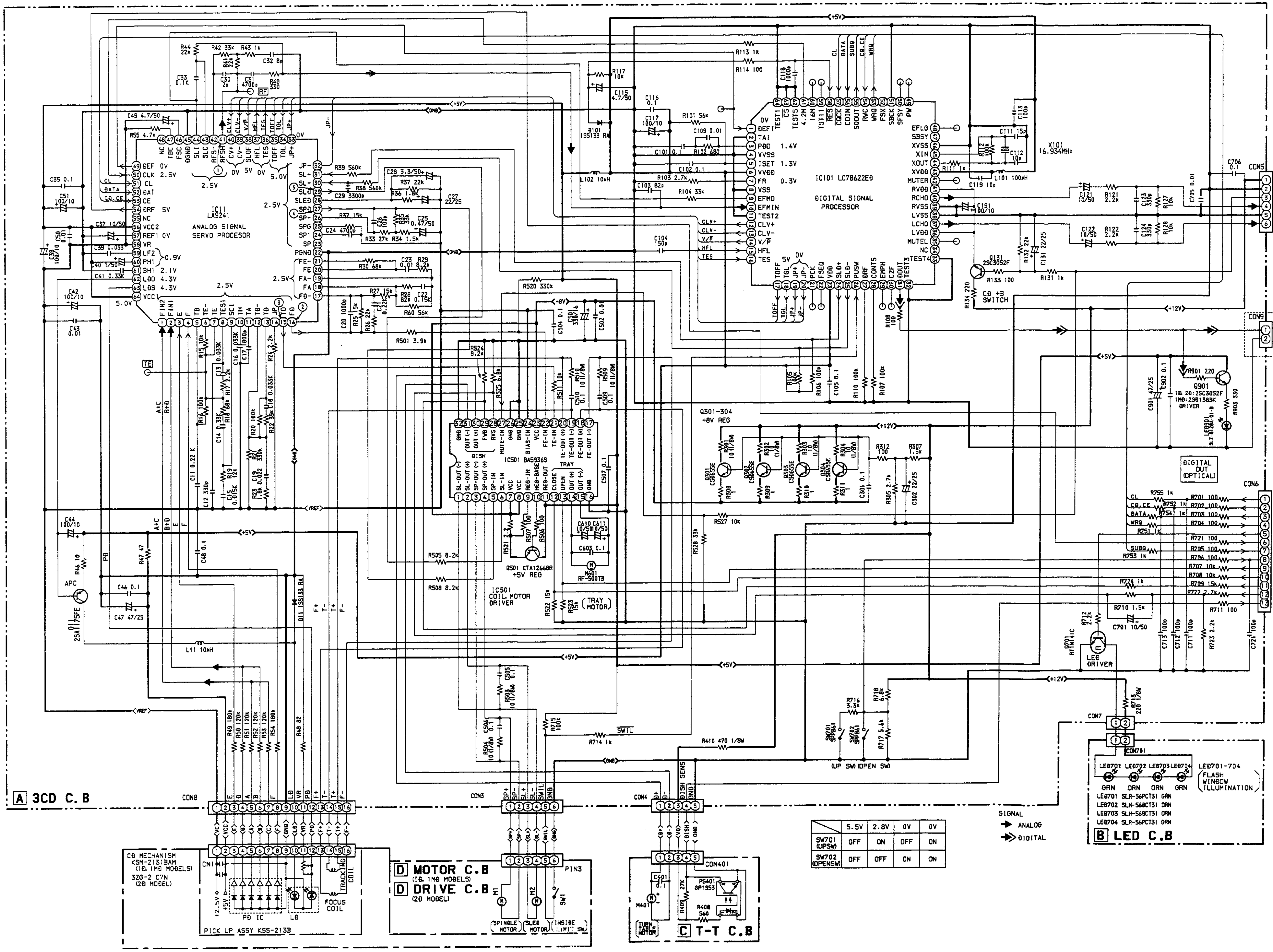
11
12
13
14
A
B
C
D
E
F
G
H
I
J
K
2D MODEL
D DRIVE C.B
M1 (SPINDLE MOTOR)
SW1 (INSIDE LIMIT SWITCH)
SW1
M3
M2 (SLED MOTOR)
M2
PIN3
FC5
1D, 1MD MODELS
D MOTOR C.B
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
SW1
M1 (SPINDLE MOTOR)
M1
<BLK>
CON3
<ORG>
BLK
CN1
FC1
FROM MAIN UNIT
FC2
FC5
CON3
1D, 1MD ONLY
FROM MAIN UNIT
FC3
CON5
SW702
SW701
Q703
Q701
IC1
IC2
CON4
Q502
CON9
CON7
LED901
LED901 DIGITAL OUT (OPTICAL)
(YEL)
(BLK)
CON 701
LED701
LED702
LED703
LED704
LED701-704 (FLASH WINDOW LIGHTING)
B LED C.B
M601
M601 (TRAY LOADING MOTOR)
FROM MAIN UNIT 1MD ONLY
A 3CD C.B
FC4
C T-T C.B
CON 401
PS401
R409
R408
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)

SCHEMATIC DIAGRAM

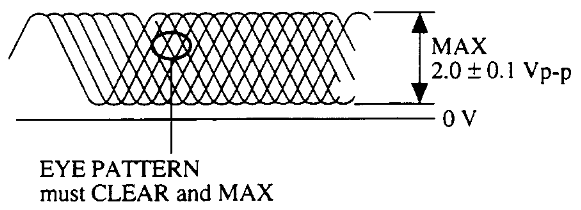

IC11 LA9241 ANALOG SIGNAL SERVO PROCESOR
IC101 LC78622E0 DIGITAL SIGNAL PROCESSOR
X101 16.934MHz
IC501 BA5936S
IC501 COIL,MOTOR DRIVER
Q501 KTA1266GR +5V REG
Q301-304 +8V REG
Q131 2SC3052F CD +B SWITCH
Q901 1D,2D:2SC3052F 1MD:2SB1383K DRIVER
Q11 2SA1175FE APC
Q701 RT1N141C LED DRIVER
M601 RF-500TB (TRAY MOTOR)
CON5 VM (+12V) D-GND CD ON R CH A-GND L CH FROM MAIN UNIT
CON9 TO MAIN UNIT 1MD ONLY
DIGITAL OUT (OPTICAL)
CON6 O-CL (CD) O-CDCE O-DATA (CD) I-WRQ O-CDLED I-DRF I-SUBQ I-CDSW O-CLOSE O-OPEN O-DISH FWD O-DISH RVS I-DISH SENS FROM MAIN UNIT
CON7
CON701
LED701 LED702 LED703 LED704
GRN ORN ORN GRN
LED701-704 (FLASH WINDOW ILLUMINATION)
LED701 SLR-56PCT31 GRN
LED702 SLR-56DCT31 ORN
LED703 SLR-56DCT31 ORN
LED704 SLR-56PCT31 GRN
B LED C.B
A 3CD C.B
CON8
CON3
CON4
SW701 SPPB61 SW702 SPPB61 (UP SW) (OPEN SW)
SIGNAL
ANALOG
DIGITAL
CD MECHANISM KSM-2131BAM (1D, 1MD MODELS) 3ZG-2 C7N (2D MODEL)
CN1
PD IC
LD
FOCUS COIL
TRACKING COIL
PICK UP ASSY KSS-213B
D MOTOR C.B (1D, 1MD MODELS)
D DRIVE C.B (2D MODEL)
PIN3
M1 M2 SW1
SPINDLE MOTOR
SLED MOTOR
INSIDE LIMIT SW
CON401
PS401 GP1S53
M401
TURN TABLE MOTOR
C T-T C.B

	5.5V	2.8V	0V	0V
SW701 (UPSW)	OFF	ON	OFF	ON
SW702 (OPENSW)	OFF	OFF	ON	ON

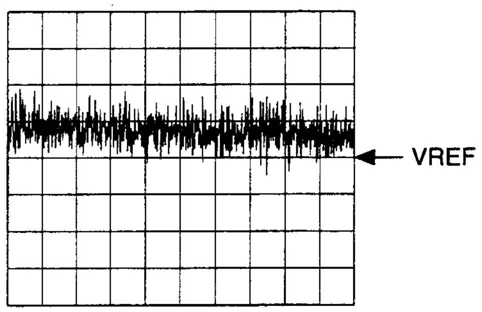
MC-Service

WAVE FORM

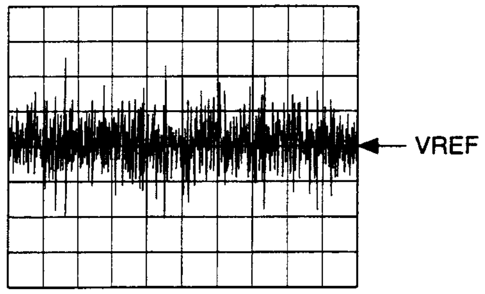
① IC11 Pin ㊶ (RFSM) VOLT/DIV: 0.5V
TIME/DIV: 1µS



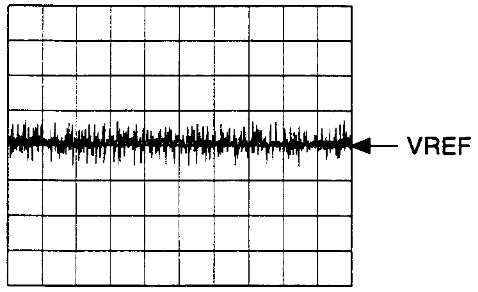
② IC11 Pin ⑯ (FD) VOLT/DIV: 100mV
TIME/DIV: 1mS



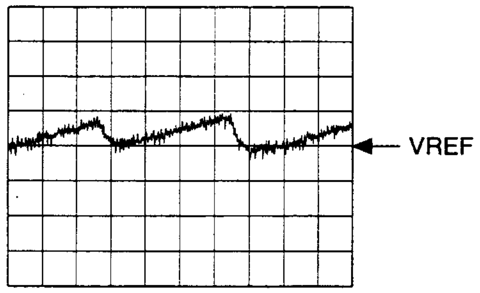
③ IC11 Pin ⑮ (TO) VOLT/DIV: 100mV
TIME/DIV: 1mS



④ IC11 Pin ㉗ (SPD) VOLT/DIV: 100mV
TIME/DIV: 1mS

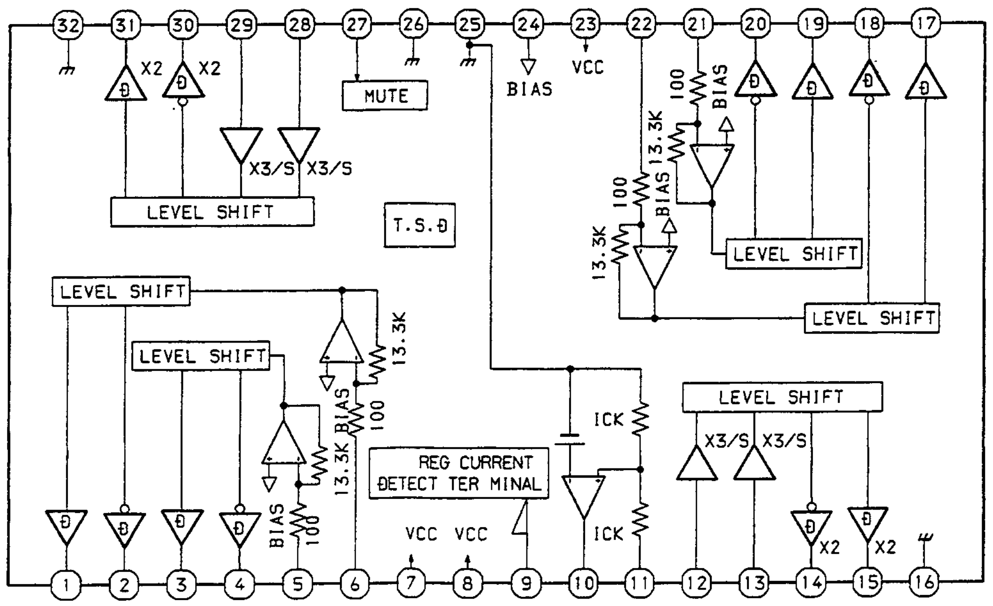


⑤ IC11 Pin ㉙ (SLD) VOLT/DIV: 200mV
TIME/DIV: 2S



IC BLOCK DIAGRAM

IC, BA5936


32
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21
20
19
18
17
X2
X2
MUTE
BIAS
VCC
100
13.3K
BIAS
X3/S
X3/S
LEVEL SHIFT
T.S.D
100
BIAS
13.3K
LEVEL SHIFT
LEVEL SHIFT
LEVEL SHIFT
LEVEL SHIFT
13.3K
BIAS
100
13.3K
ICK
LEVEL SHIFT
X3/S
X3/S
REG CURRENT
DETECT TER MINAL
BIAS
100
VCC
VCC
ICK
X2
X2
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IC DESCRIPTION

IC, LA9241M

端子番号	端子名称	I/O	機能説明
1	FIN2	I	ピックアップのフォトダイオード接続用ピン。FIN1ピンとの加算でRF信号を生成し、減算でFE信号を生成する。
2	FIN1	I	ピックアップのフォトダイオード接続用ピン。
3	E	I	ピックアップのフォトダイオード接続用ピン。Fピンとの減算でTE信号を生成する。
4	F	I	ピックアップのフォトダイオード接続用ピン。
5	TB	I	TE信号のDC成分入力用ピン。
6	TE−	I	TE信号のゲイン設定用抵抗をTEピン間に接続するピン。
7	TE	O	TE信号出力ピン。
8	TESI	I	TES "Track Error Sence" コンパレータ入力ピン。TE信号をバンドパスし、入力する。
9	SCI	I	ショック検出用入力ピン。
10	TH	I	トラッキングゲイン時定数設定用ピン。
11	TA	O	TAアンプ出力ピン。
12	TD−	I	トラッキング位相補償定数をTD、VRピン間で構成するためのピン。
13	TD	I	トラッキング位相補償設定用ピン。
14	JP	I	トラッキングシャンプ信号 (キックパルス) 振幅設定用ピン。
15	TO	O	トラッキング制御信号出力ピン。
16	FD	O	フォーカシング制御信号出力ピン。
17	FD−	I	フォーカシング位相補償定数をFD、FAピン間で構成するためのピン。
18	FA	I	フォーカシング位相補償定数をFD−、FA−ピン間で構成するためのピン。
19	FA−	I	フォーカシング位相補償定数をFA、FEピン間で構成するためのピン。
20	FE	O	FE信号の出力ピン。
21	FE−	I	FE信号のゲイン設定用抵抗をFEピン間に接続するピン。
22	AGND	—	アナログ信号用GND。
23	NC	—	NO CONNECT
24	SP	O	CV＋、CV−ピン入力信号のシングルエンド出力。
25	SPG	I	スピンドル12cmモード時ゲイン設定用抵抗接続ピン。
26	SP−	I	SPDピンとともにスピンドル位相補償定数接続用ピン。
27	SPD	O	スピンドル制御信号出力ピン。
28	SLEQ	I	スレッド位相補償定数接続用ピン。
29	SLD	O	スレッド制御信号出力ピン。
30、31	SL−、SL＋	I	マイコンからのスレッド送り信号入力ピン。
32、33	JP−、JP＋	I	DSPからのトラッキングジャンプ信号入力ピン。
34	TGL	I	DSPからのトラッキングゲインコントロール信号入力ピン。 TGL=「H」でゲインロー。
35	TOFF	I	DSPからのトラッキングオフコントロール信号入力ピン。 TOFF=「H」でオフ。
36	TES	O	TES信号をDSPへ出力するピン。
37	HFL	O	"High Frequency Level" は、メインビームの位置がビット上か、ミラー上かの判断に利用される。

端子番号	端子名称	I/O	機　能　説　明
38	SLOF	I	スレッドサーボオフコントロール入力ピン。
39、40	CV−、CV＋	I	DSPからのCLVエラー信号入力用ピン。
41	RFSM	O	RF出力ピン。
42	RFS−	I	RFSMピンとともにRFのゲイン設定およびEFM信号の3T補償定数設定用ピン。
43	SLC	O	“Slice Level Control”は、RF波形のDSPによるデータスライスのレベルを制御する出力ピン。
44	SLI	I	DSPによるデータスライスのレベルを制御するための入力ピン。
45	DGND	—	ディジタル系のGNDピン。
46	FSC	O	フォーカスサーチスムージングコンデンサ用出力ピン。
47	TBC	I	“Tracking Balance Control”EFバランス可変範囲用設定ピン。
48	NC	—	NO CONNECT
49	DEF	O	ディスクのディフェクト検出出力ピン。
50	CLK	I	基準クロック入力ピン。DSPの4.23MHzが入力される。
51	CL	I	マイコンコマンドクロック入力ピン。
52	DAT	I	マイコンコマンドデータ入力ピン。
53	CE	I	マイコンコマンドチップイネーブル入力ピン。
54	DRF	O	“Detect RF”RFレベル検出出力。
55	FSS	I	“Focus Serch Select”フォーカスサーチモード(基準電圧に対し±サーチ／＋サーチ)の切り換えピン。
56	VCC2	—	サーボ系、ディジタル系用VCCピン。
57	REFI	—	基準電圧用パスコン接続用ピン。
58	VR	O	基準電圧出力ピン。
59	LF2	I	ディスクのディフェクト検出時定数設定用ピン。
60	PH1	I	RF信号のピークホールド用コンデンサ接続用ピン。
61	BH1	I	RF信号のボトムホールド用コンデンサ接続用ピン。
62	LDD	O	APC回路出力ピン。
63	LDS	I	APC回路入力ピン。
64	VCC1	—	RF系VCCピン。

IC, LC78622E

端子番号	端子名称	I/O	機能説明	
1	DEFI	I	ディフェクト検出信号(DEF)入力端子。(未使用時、0Vに接続すること。)	
2	TAI	I	PLL用	テスト用入力端子。プルダウン抵抗内蔵。必ず0Vに接続すること。
3	PDO	O		外部VCO制御用位相比較出力端子。
4	VVSS	—		内蔵VCO用接地端子。必ず0Vに接続すること。
5	ISET	I		PDO出力の電流調整用抵抗接続端子。
6	VVDD	—		内蔵VCO用電源端子。
7	FR	I		VCO周波数レンジ調整用。
8	VSS	—	ディジタル系接地端子。必ず0Vに接続すること。	
9	EFMO	O	スライスレベルコントロール用	EFM信号出力端子。
10	EFMIN	I		EFM信号入力端子。
11	TEST2	I	テスト用入力端子。プルダウン抵抗内蔵。必ず0Vに接続すること。	
12、13	CLV+、CLK−	O	ディスクモータコントロール用出力。コマンドにより3値出力可能。	
14	V/$\overline{P}$	O	ラフサーボ/位相制御の自動切り換えモニタ出力端子。「H」でラフサーボ、「L」で位相サーボ。	
15	HFL	I	トラック検出信号入力端子。シュミット入力。	
16	TES	I	トラッキング誤差信号入力端子。シュミット入力。	
17	TOFF	O	トラッキングOFF出力端子。	
18	TGL	O	トラッキング・ゲイン切り換え用出力端子。「L」でゲインを上げる。	
19、20	JP+、JP−	O	トラックジャンプコントロール用出力。コマンドにより3値出力可能。	
21	PCK	O	EFMデータ再生用クロックモニタ端子。位相ロック時、4.3218MHz。	
22	FSEQ	O	同期信号検出出力端子。EFM信号から検出した同期信号と内部生成の同期信号が一致した時に「H」。	
23	VDD	—	ディジタル系電源端子。	
24～28	CONT1～CONT5	I/O	汎用入出力端子1～5	マイコンからのシリアルデータコマンドで制御。使用しない場合、入力端子に設定して0Vに接続するか出力端子に設定してオープンにすること。
29	EMPH	O	ディエンファシス・モニタ出力端子。「H」の時ディエンファシス・ディスク再生中。	
30	C2F	O	C2フラグ出力端子。	
31	DOUT	O	ディジタルOUT出力端子。(EIAJフォーマット)	
32、33	TEST3、TEST4	I	テスト用入力端子。プルダウン抵抗内蔵。必ず0Vに接続すること。	
34	N.C.	—	未使用端子。オープンで使用すること。	
35	MUTEL	O	Lチャネル1ビットDAC	Lチャネル用ミュート出力端子。
36	LVDD	—		Lチャネル用電源端子。
37	LCHO	O		Lチャネル出力端子。
38	LVSS	—		Lチャネル用接地端子。必ず0Vに接続すること。
39	RVSS	—	Rチャネル1ビットDAC	Rチャネル用接地端子。必ず0Vに接続すること。
40	RCHO	O		Rチャネル出力端子。
41	RVDD	—		Rチャネル用電源端子。
42	MUTER	O		Rチャネル用ミュート出力端子。
43	XVDD	—	水晶発振用電源端子。	

端子番号	端子名称	I/O	機　能　説　明
44	XOUT	O	16.9344MHz水晶振動子の接続端子。
45	XIN	I	
46	XVSS	—	水晶発振用接地端子。必ず0Vに接続すること。
47	SBSY	O	サブコードブロックの同期信号出力端子。
48	EFLG	O	C1、C2、1重、2重の訂正モニタ端子。
49	PW	O	サブコードP、Q、R、S、T、U、Wの出力端子。
50	SFSY	O	サブコードフレーム同期信号出力端子。サブコードがスタンバイした時、立下る。
51	SBCK	I	サブコード読み出しクロック入力端子。シュミット入力。(未使用時0Vに接続すること。)
52	FSX	O	水晶発振から分周した7.35kHz同期信号出力端子。
53	WRQ	O	サブコードQ出力スタンバイ出力端子。
54	RWC	I	リード／ライト制御入力端子。シュミット入力。
55	SQOUT	O	サブコードQ出力端子。
56	COIN	I	マイコンからのコマンド入力端子。
57	$\overline{\text{CQCK}}$	I	コマンド入力取り込みクロックまたはSQOUTからのサブコード取り出しクロック入力端子。シュミット入力。
58	$\overline{\text{RES}}$	I	LC78622リセット入力端子。電源投入時に、一旦「L」にする。
59	TST11	O	テスト用出力端子。オープン(通常「L」出力)で使用すること。
60	16M	O	16.9344MHz出力端子。
61	4.2M	O	4.2336MHz出力端子。
62	TEST5	I	テスト用入力端子。プルダウン抵抗内蔵。必ず0Vに接続すること。
63	$\overline{\text{CS}}$	I	チップセレクト入力端子。プルダウン抵抗内蔵。非制御時、0Vに接続すること。
64	TEST1	I	テスト用入力端子。プルダウン抵抗はない。必ず0Vに接続すること。

注) 各電源端子(VDD、VVDD、LVDD、RVDD、XVDD)には必ず同電位を供給すること。

IC, LA9241M

Pin No.	Pin Name	I/O	Description
1	FIN2	I	Pin to which external pickup photo diode is connected. RF signal is created by adding with the FIN1 pin signal. FE signal is created by subtracting from the FIN1 pin signal.
2	FIN1	I	Pin to which external pickup photo diode is connected.
3	E	I	Pin to which external pickup photo diode is connected. TE signal is created by subtracting from the F pin signal.
4	F	I	Pin to which external pickup photo diode is connected.
5	TB	I	DC component of the TE signal is input.
6	TE–	I	Pin to which external resistor setting the TE signal gain is connected between the TE pin.
7	TE	O	TE signal output pin.
8	TESI	I	TES "Track Error Sense" comparator input pin. TE signal is passed through a band-pass filter then input.
9	SCI	I	Shock detection signal input pin.
10	TH	I	Tracking gain time constant setting pin.
11	TA	O	TA amplifier output pin.
12	TD–	I	Pin to which external tracking phase compensation constants are connected between the TD and VR pins.
13	TD	I	Tracking phase compensation setting pin.
14	JP	I	Tracking jump signal (kick pulse) amplitude setting pin.
15	TO	O	Tracking control signal output pin.
16	FD	O	Focusing control signal output pin.
17	FD–	I	Pin to which external focusing phase compensation constants are connected between the FD and FA pins.
18	FA	I	Pin to which external focusing phase compensation constants are connected between the FD– and FA– pins.
19	FA–	I	Pin to which external focusing phase compensation constants are connected between the FA and FE pins.
20	FE	O	FE signal output pin.
21	FE–	I	Pin to which external FE signal gain setting resistor is connected between the FE pin.
22	AGND	—	Analog signal GND.
23	NC	—	No connection.
24	SP	O	Single ended output of the CV+ and CV– pin input signal.
25	SPG	I	Pin to which external spindle gain setting resistor in 12 cm mode is connected.
26	SP–	I	Pin to which external spindle phase compensation constants are connected together with SPD pin.
27	SPD	O	Spindle control signal output pin.
28	SLEQ	I	Pin to which external sled phase compensation constants are connected.
29	SLD	O	Sled control signal output pin.
30, 31	SL–, SL+	I	Sled advance signal input pin from microprocessor.
32, 33	JP–, JP+	I	Tracking jump signal input pin from DSP.
34	TGL	I	Tracking gain control signal input from DSP. Low gain when TGL = H.
35	TOFF	I	Tracking off control signal input pin from DSP. Off when TOFF = H.

Pin No.	Pin Name	I/O	Description
36	TES	O	Pin from which TES signal is output to DSP.
37	HFL	O	"High Frequency Level" is used to judge whether the main beam position is on top of bit or on top of mirror.
38	SLOF	I	Sled servo off control input pin.
39, 40	CV–, CV+	I	CLV error signal input pin from DSP.
41	RFSM	O	RF output pin.
42	RFS–	I	RF gain setting and EFM signal 3T compensation constant setting pin together with RFSM pin.
43	SLC	O	"Slice Level Control" is the output pin which controls the RF signal data slice level by DSP.
44	SLI	I	Input pin which control the data slice level by the DSP.
45	DGND	—	Digital system GND.
46	FSC	O	Output pin to which external focus search smoothing capacitor is connected.
47	TBC	I	"Tracking Balance Control" EF balance variable range setting pin.
48	NC	—	No connection.
49	DEF	O	Disc defect detector output pin.
50	CLK	I	Reference clock input pin. 4.23 MHz of the DSP is input.
51	CL	I	Microprocessor command clock input pin.
52	DAT	I	Microprocessor command data input pin.
53	CE	I	Microprocessor command chip enable input pin.
54	DRF	O	"Detect RF" RF level detector output.
55	FSS	I	"Focus Search Select" focus search mode (± search/+ search) select pin.
56	VCC2	—	Servo system and digital system Vcc pin.
57	REFI	—	Pin to which external bypass capacitor for reference voltage is connected.
58	VR	O	Reference voltage output pin.
59	LF2	I	Disc defect detector time constant setting pin.
60	PH1	I	Pin to which external capacitor for RF signal peak holding is connected.
61	BH1	I	Pin to which external capacitor for RF signal bottom holding is connected
62	LDD	O	APC circuit output pin.
63	LDS	I	APC circuit input pin.
64	VCC1	—	RF system Vcc pin.

IC, LC78622E

Pin No.	Pin Name	I/O	Description	
1	DEFI	I	Defect sense signal (DEF) input pin. (Connect to 0V when not used).	
2	TAI	I	For PLL.	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.
3	PDO	O		Phase comparator output pin to control external VCO.
4	VVSS	—		GND pin for built-in VCO. Be sure to connect to 0V.
5	ISET	I		Pin to which external resistor adjusting the PD0 output current.
6	VVDD	—		Power supply pin for built-in VCO.
7	FR	I		Pin for VCO frequency range adjustment.
8	VSS	—	Digital system GND. Be sure to connect to 0V.	
9	EFMO	O	For slice level control.	EFM signal output pin.
10	EFMIN	I		EFM signal input pin.
11	TEST2	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.	
12, 13	CLV+, CLK–	O	Disc motor control output. Three level output is possible using command.	
14	V/$\overline{P}$	O	Rough servo or phase control automatic selection monitoring output pin. Rough servo at H. Phase servo at L.	
15	HFL	I	Track detect signal input pin. Schmidt input.	
16	TES	I	Tracking error signal input pin. Schmidt input.	
17	TOFF	O	Tracking OFF output pin.	
18	TGL	O	Tracking gain selection output pin. Gain boost at L.	
19, 20	JP+, JP–	O	Track jump control signal output pin. Three level output is possible using command.	
21	PCK	O	EFM data playback clock monitoring pin 4.3218 MHz when phase is locked in.	
22	FSEQ	O	Sync signal detection output pin. H when the sync signal which is detected from EFM signal and thesync signal which is internally generated agree.	
23	VDD	—	Digital system power supply pin.	
24~28	CONT1~CONT5	I/O	General purpose input/output pin 1 to 5.	The pin is controlled by the serial data command from microprocessor. When the pin is not used, set the pin to the input terminal and connect to 0V, or alternately set the pin to output terminal and leave the pin open.
29	EMPH	O	De-emphasis monitor output pin. De-emphasis disc is being played back at H.	
30	C2F	O	C2 flag output pin.	
31	DOUT	O	DIGITAL OUT output pin. (EIAJ format).	
32, 33	TEST3, TEST4	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.	
34	N.C.	—	Not used. Set the pin to open.	
35	MUTEL	O	L-channel 1-bit DAC.	L-channel mute output pin.
36	LVDD	—		L-channel power supply pin.
37	LCHO	O		L-channel output pin.
38	LVSS	—		L-channel GND. Be sure to connect to 0V.
39	RVSS	—	R-channel 1-bit DAC.	R-channel GND. Be sure to connect to 0V.
40	RCHO	O		R-channel output pin.
41	RVDD	—		R-channel power supply pin.
42	MUTER	O		R-channel mute output pin.

Pin No.	Pin Name	I/O	Description
43	XVDD	—	Crystal oscillator power supply pin.
44	XOUT	O	Pin to which external 16.9344 MHz crystal oscillator is connected.
45	XIN	I	
46	XVSS	—	Crystal oscillator GND pin. Be sure to connect to 0V.
47	SBSY	O	Subcode block sync signal output pin.
48	EFLG	O	C1, C2, single and dual correction monitoring pin.
49	PW	O	Subcode P, Q, R, S, T, U and W output pin.
50	SFSY	O	Subcode frame sync signal output pin. Falls down when subcode enters standby.
51	SBCK	I	Subcode read clock input pin. Schmidt input. (Be sure to connected to 0V when not in use.)
52	— FSX	O	Pin outputting the 7.35 kHz sync signal which is generated by dividing frequency of crystal oscillator.
53	WRQ	O	Subcode Q output standby output pin.
54	RWC	I	Read/write control input pin. Schmidt input.
55	SQOUT	O	Subcode Q output pin.
56	COIN	I	Command input pin from microprocessor.
57	$\overline{\text{CQCK}}$	I	Command input read clock or subcode read input clock from SQOUT pin
58	$\overline{\text{RES}}$	I	LC78622 reset input pin. Set this pin to L once when the main power is turned on.
59	TST11	O	Test signal output pin. Use this pin as open (normally L output).
60	16M	O	16.9344 MHz output pin.
61	4.2M	O	4.2336 MHz output pin.
62	TEST5	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.
63	$\overline{\text{CS}}$	I	Chip select signal input pin with built-in pull-down resistor. Be sure to connect to 0V while it is not controlling.
64	TEST1	I	Test signal input pin without built-in pull-down resistor. Be sure to connect to 0V.

Note: The same potential must be applied to the respective power supply terminals. (VDD, VVDD, LVDD, RVDD, XVDD)

TEST MODE

1. CDテストモードの起動方法
ファンクションCDの釦を押しながら、ACプラグを挿入する。
上記によりFL表示管が全て点灯し、テストモードが起動します。

2. CDテストモードの解除方法
下記のいずれか1つの操作で解除します。
- ファンクション釦を押す (CDファンクション釦以外)
- パワーSW釦を押す。
- ACプラグを抜く。

3. CDテストモードの機能説明
テストモード起動後、各操作釦を押す事により次のNo1～No5の各モード機能が使用できます。

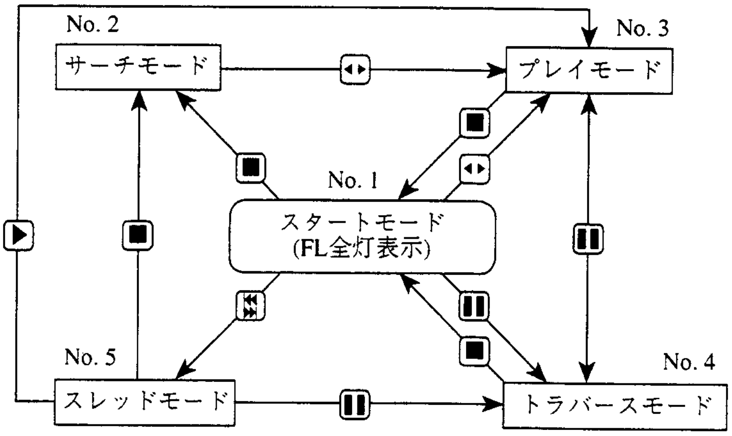
Mode/No.	操作	FL表示	動作	内容
スタートモード No.1	起動	全灯表示	● TEST MODE 起動 ● CDブロック電源ON	● FL表示確認 (全灯)
サーチモード No.2	■ 釦	CD--	● LASER DIODE 常時発光 ● 連続フォーカスサーチ (PUレンズがフルスイングを繰り返す) * 10分以上の連続フォーカスは避けて下さい。 *注1	● APC回路確認 ● レーザー電流測定 (レーザー電流コントロール、トランジスタのエミッターGND間の抵抗の両端。) FOCUS SERVO ● フォーカスラッチ波形確認 ● フォーカスエラー波形確認 (サーチモードではFOK/FZCは監視せず。)
プレイモード No.3	◀▶ 釦	CD1	● 通常再生 ● TOC READ出来ない場合 フォーカスサーチを続行 *注1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO DRF確認
トラバースモード No.4	❚❚ 釦	CD1	● DISC通常再生中 1回押す トラッキングサーボOFF 2回押す トラッキングサーボON *注2	TRACKING SERVO ON/OFF トラッキングバランス (トラバース) 確認
スレッドモード No.5	⏮ 釦 ⏭	全灯表示	● ピックアップ外周へ移動 ● ピックアップ内周へ移動 *注3 (再生中は通常動作致します)	SLED SERVO SLEDメカ動作確認

*注1 フォーカスサーチを連続して10分以上動作し続けるとドライバーICが発熱し保護回路が働く為、トラッキングサーボがかからない状態となる場合が有ります。この様な場合には、電源を切り約10分間放熱後、再スタートして下さい。

*注2 「❚❚」状態で、「⏮」または「⏭」釦を押さない事。「❚❚」状態解除後、再生出来なくなります。「❚❚」状態で、「⏮」または「⏭」釦を押した場合には「■」釦を押しスタートモード (No.1) に戻して下さい。

*注3 ピックアップが最内周、最外周の位置でも「⏮」または「⏭」釦を押している間はスレッドモータが回転する為、ギヤ破損に注意して下さい。

4. 操作概要
下図の様にスタートモードから、矢印方向の流れで各モードの操作が行えます。モード変更は、下図の流れに従い行って下さい。



尚、DISC DIRECT PLAY釦を押した場合には、上図のPLAY釦を押した時と同様の動作となります。またプレイモード／トラバースモード時にopen/close釦により、トレイをopenさせた場合には、スタートモードに戻ります。

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.

- Press the function button. (except CD function button)
- Press the power switch button.
- Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

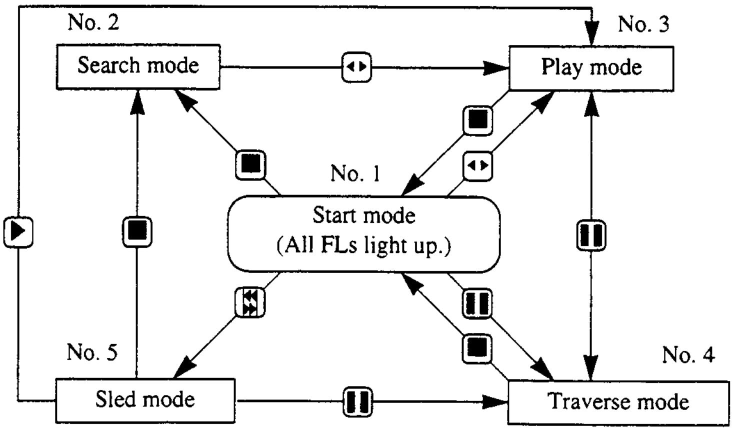
Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated. • CD block power is ON.	• FL display check (All displays light.)
Search mode No.2	■ key	CD--	• Laser diode turns always ON. • Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	• APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.) FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶ key	CD 1	• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check DRF
Traverse mode No.4	❚❚ key	CD 1	• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) check
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ❚❚ status is active. If they are pressed, playback will not be possible after the ❚❚ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ❚❚ status, press the ■ key and return to the start mode (No.1).

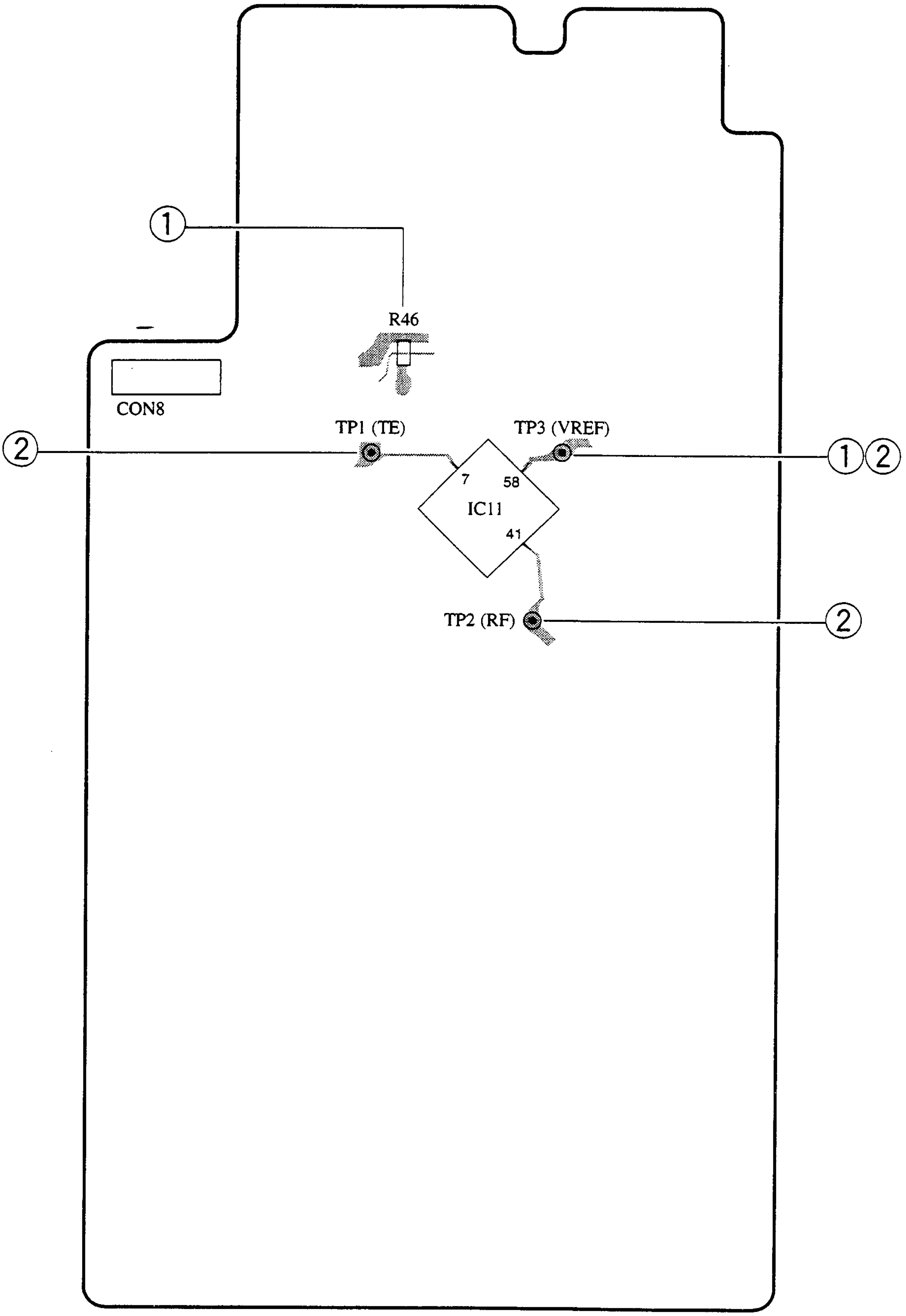
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



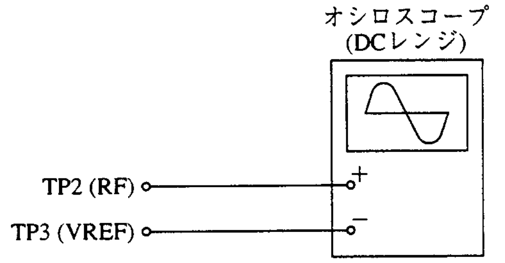
If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

A 3CD C.B (PATTERN SIDE)

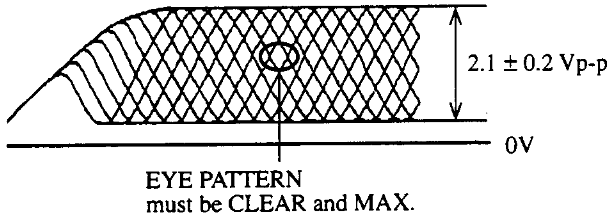

①
R46
CON8
②
TP1 (TE)
TP3 (VREF)
①②
7
58
IC11
41
TP2 (RF)
②

注意：・(10：1) のプローブを接続して、調整して下さい。
・各調整には、オシロスコープの ⊖ 側を TP3 (VREF) に接続して下さい。

1. RF波形の確認

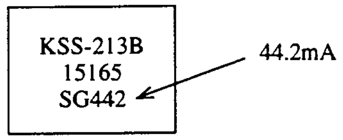

オシロスコープ
(DCレンジ)
TP2 (RF)
TP3 (VREF)
+
−

1) テストポイントTP2 (RF)、TP3 (VREF) にオシロスコープを接続する。
2) POWERスイッチをONにする。
3) テストディスクTCD-782 (YEDS-18) を入れて2曲目をPLAYさせる。
4) オシロスコープの波形の振幅が2.1 Vp-pとなり、かつ中央のひし形が、鮮明である事を確認する。


2.1 ± 0.2 Vp-p
0V
EYE PATTERN
must be CLEAR and MAX.

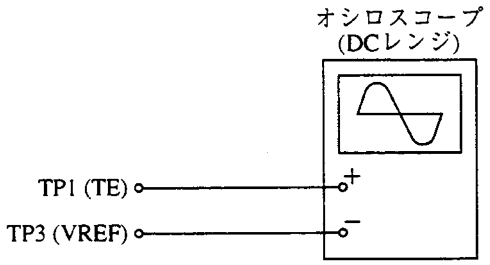
VOLT/DIV：50mV
TIME/DIV：0.5 μS

注意：レーザー電流の確認はR46 (10 Ωの両端電圧) で行えます。レーザーピックアップの裏側のラベルの電流値に対して± 6.0mAに入っていること。

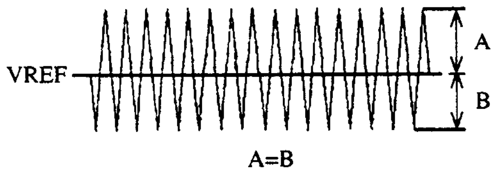

KSS-213B
15165
SG442
44.2mA

$$\text{レーザー電流Iop} = \frac{\text{R46の両端電圧}}{10\Omega}$$

2. トラッキング・バランス確認


オシロスコープ
(DCレンジ)
TP1 (TE)
TP3 (VREF)
+
−

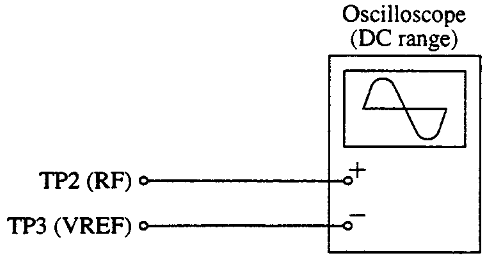
1) テストポイントTP1 (TE)、TP3 (VREF) にオシロスコープを接続する。
2) CDテストモードを起動する。
3) テストディスクTCD-782 (YEDS-18) を入れて、CDテストモードのトラバースモードにする。
4) オシロスコープのトラバース波形が、下図のように上下対称である事を確認する。
5) 確認後、CDテストモードを解除する。



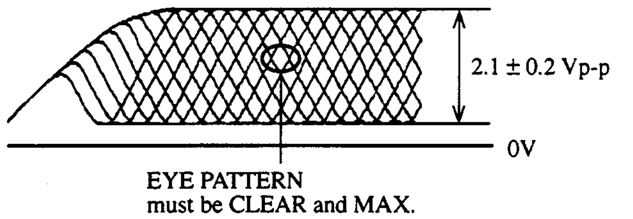
VOLT/DIV：20mV
TIME/DIV：1mS

Note:
- Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
- During adjustment, connect (⊖) pin of an oscilloscope to TP3 (VREF).

1. RF waveform Check

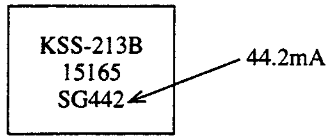

Oscilloscope
(DC range)
TP2 (RF)
TP3 (VREF)
+
−

1) Connect an oscilloscope to test points TP2 (RF) and TP3 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second program.
4) Confirm that the waveform at oscilloscope has amplitude of 2.1 Vp-p, and clear wedge area in its center.


2.1 ± 0.2 Vp-p
0V
EYE PATTERN
must be CLEAR and MAX.

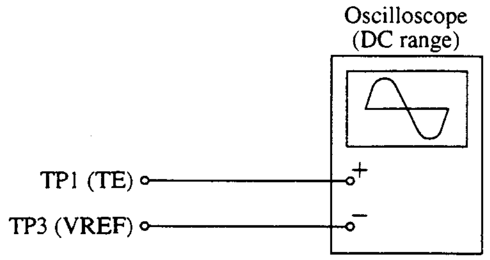
VOLT/DIV: 50mV
TIME/DIV: 0.5μS

Note: The current of the laser signal can be checked with the voltages on both sides of R46 (voltage across 10Ω). The difference for the specified value shown on the label must be within ± 6.0mA.

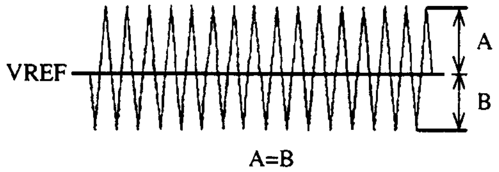

KSS-213B
15165
SG442
44.2mA

$$\text{Laser current Iop} = \frac{\text{Voltage across R46}}{10\Omega}$$

2. Tracking Balance Check

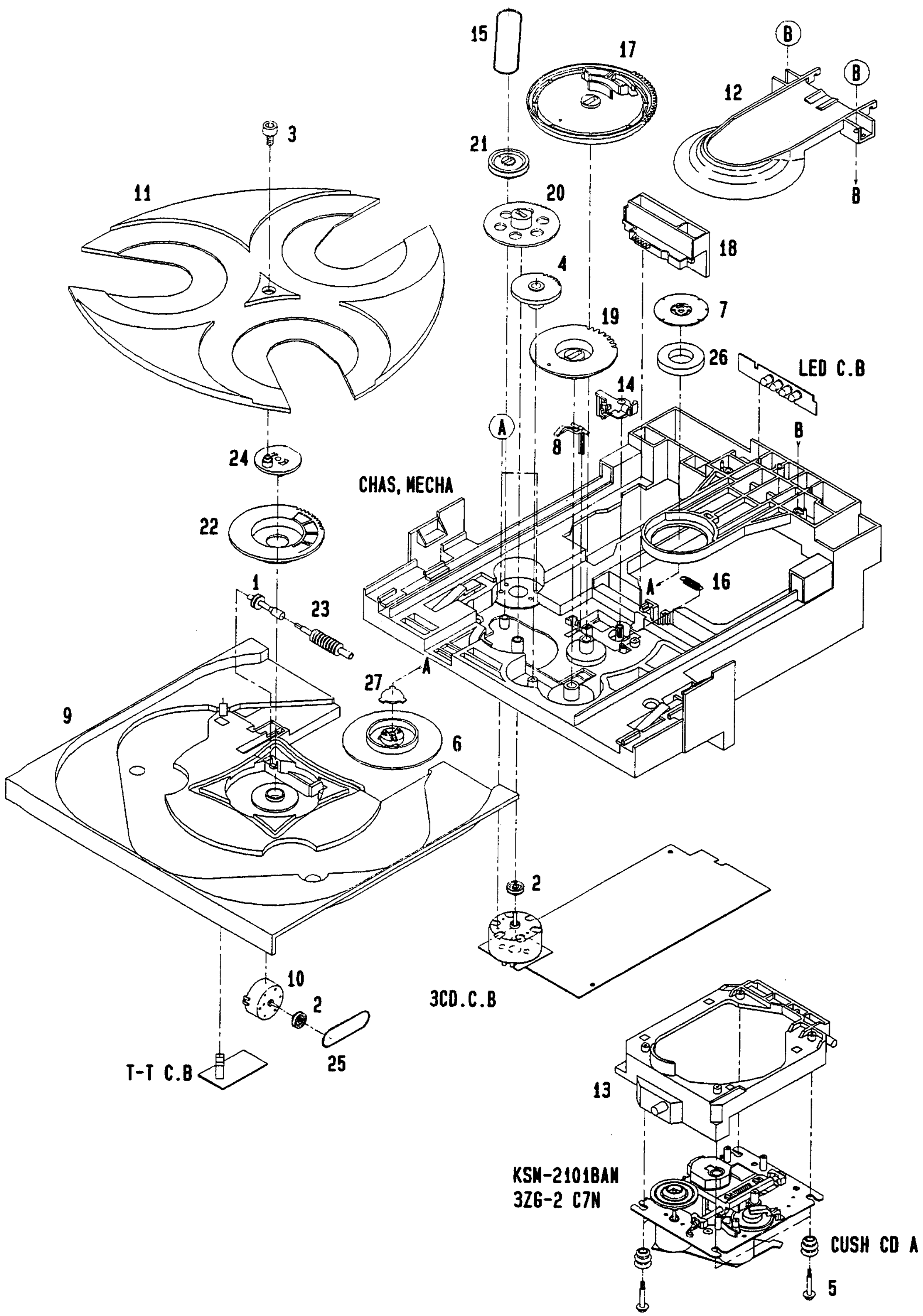

Oscilloscope
(DC range)
TP1 (TE)
TP3 (VREF)
+
−

1) Connect an oscilloscope to test points TP1 (TE) and TP3 (VREF).
2) Start up the CD test mode.
3) Insert the test disc TCD-782(YEDS-18) and enter the traverse mode of the CD test mode.
4) Confirm that the traverse waveform on an oscilloscope is vertically symmetrical as shown in the figure below.
5) After confirming the waveform, release the CD test mode.



VOLT/DIV: 20mV
TIME/DIV: 1mS

MECHANICAL EXPLODED VIEW 1/1

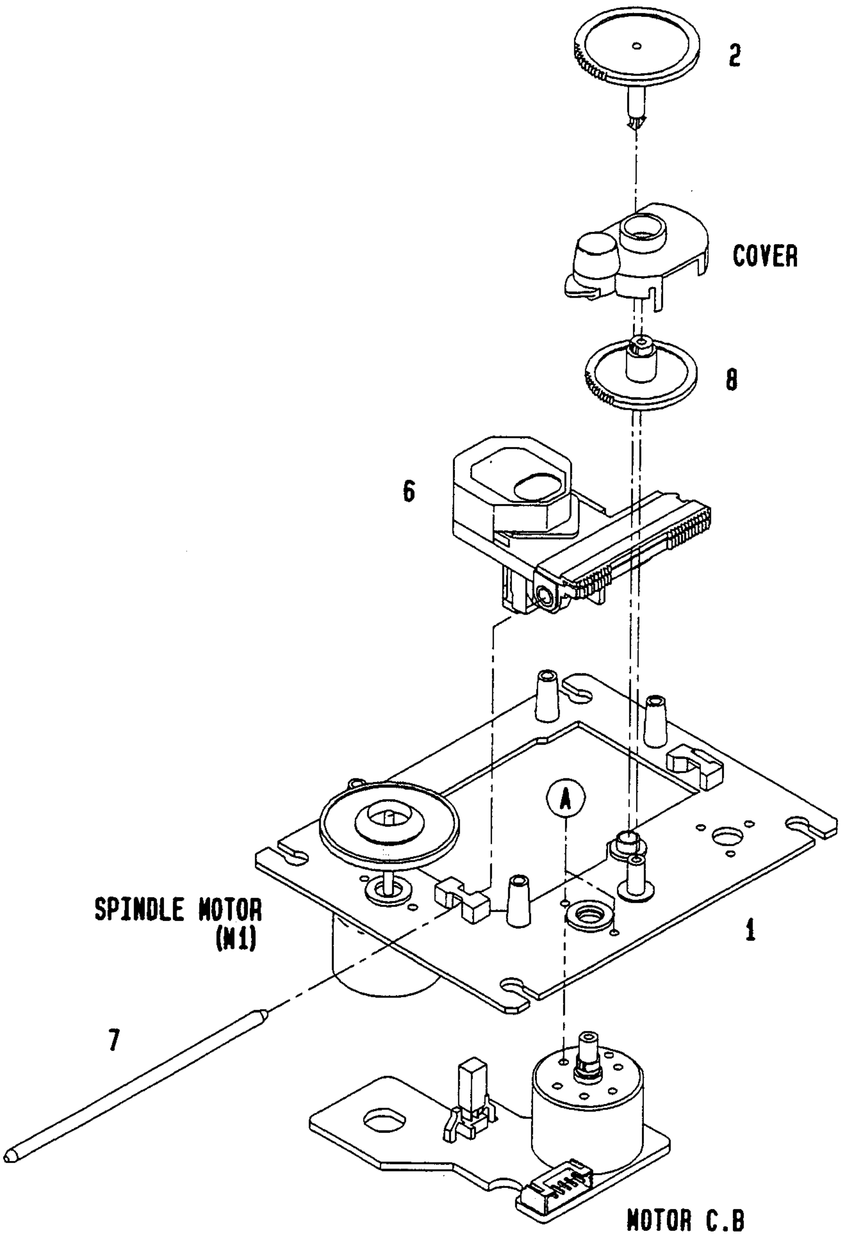


MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	84-ZG1-239-110	1A	PULLY, WORM N
2	81-ZG1-212-010	0E	PULLY, LOAD MO
3	81-ZG1-239-010	0E	S-SCREW, TT
4	81-ZG1-291-010	0E	GEAR, TRAY RELAY NO3
5	81-ZG1-271-010	0E	S-SCREW, MECH REAR
6	81-ZG1-277-210	1A	HLDR, MAGNET N
7	81-ZG1-229-110	0E	PLATE, MAGNET<1MD, 1D>
7	81-ZG1-255-110	0E	PLATE, MAGNET MK2<1DM, 2DM>
8	83-ZG3-213-010	0E	LVR, SW
9	84-ZG1-003-210	1M	TRAY, NO2-B
10	87-045-364-010	1D	MOTOR, (BCH3B14)
11	84-ZG1-005-110	1C	TURNTABLE, NO1
12	84-ZG1-011-010	1A	REFLECTOR, CD
13	84-ZG1-212-110	1A	HLDR, MECHA NO2
14	84-ZG1-208-010	0E	LEVER, CAM
15	84-ZG1-209-010	0E	BELT, SQ1.8-117.7
16	84-ZG1-211-010	0E	SPR-E CAM S
17	84-ZG1-215-210	1B	GEAR, MAIN CAM BLU
18	84-ZG1-216-210	1A	SLIDE, MECHA CAM YEL
19	84-ZG1-205-110	1A	GEAR, TRAY
20	84-ZG1-206-110	0E	GEAR, RELAY
21	84-ZG1-207-010	0E	PULLY, RELAY
22	84-ZG1-221-010	1A	GEAR, MAIN TT
23	84-ZG1-238-010	1A	GEAR, WORM N
24	84-ZG1-224-010	0E	LEVER, TT
25	84-ZG1-225-010	0E	BELT, SQ1.0-63.3
26	87-036-326-010	0E	MAGNET, CLAMPER 93<1MD, 1D, 1DM>
26	83-ZG3-602-010	0E	RING, MAG<2DM>
27	84-ZG1-248-010	0E	SPR-C, WORM
A	87-251-070-410	0E	U+2.6-3
B	87-067-703-010	0E	BVT 2+3-10 W/O SLOT

CD MECHANISM EXPLODED VIEW 1/1 (KSM-2131BAM <1D, 1MD>)

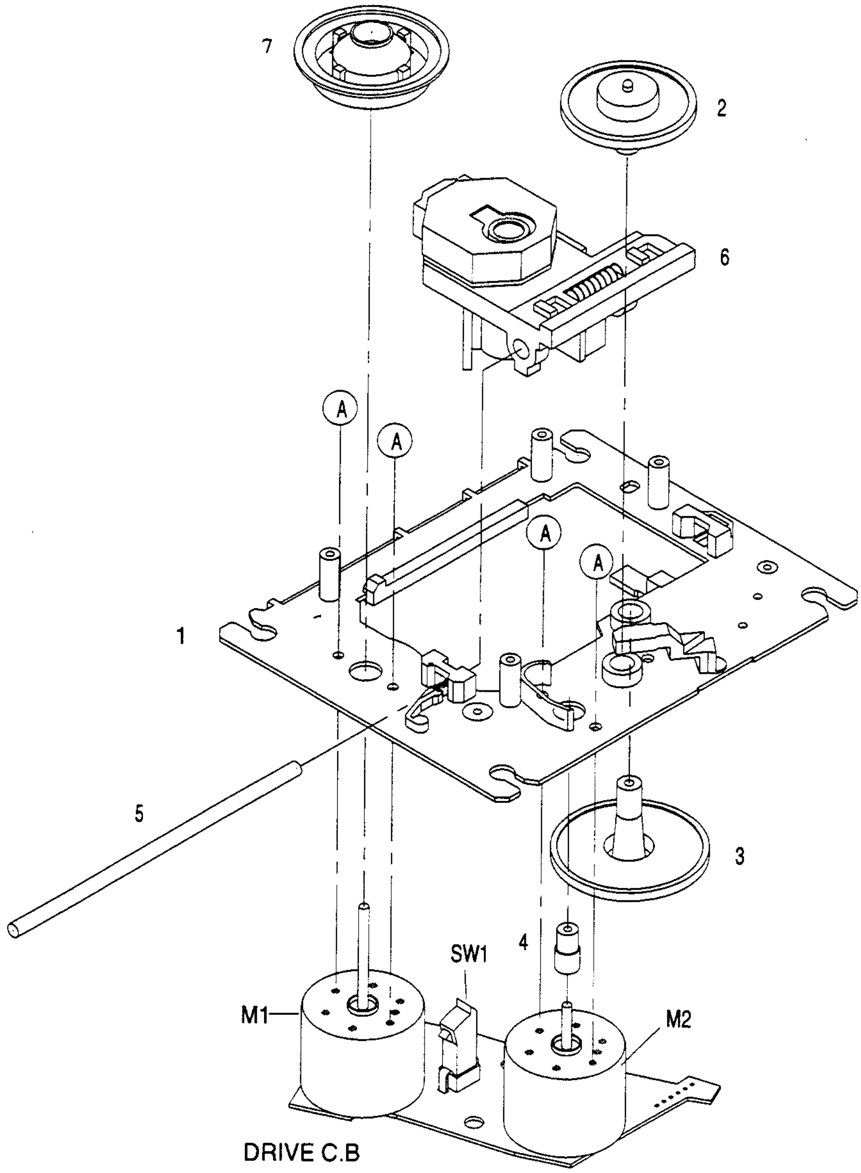


CD MECHANISM PARTS LIST 1/1 (KSM-2131BAM <1D, 1MD>)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION	REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	9X-262-587-110	--	MOTOR CHASSIS ASSY	A	97-621-255-150	0E	SCREW+P2-3
2	92-626-907-010	--	GEAR(A)				
6	98-848-379-310	--	OPTICAL PICK UP KSS-213B				
7	92-626-908-010	2A	SHAFT SLED				
8	92-627-003-010	--	GEAR B				

CD MECHANISM EXPLODED VIEW 1／1 (3ZG-2 C7N <2D>)



CD MECHANISM PARTS LIST 1／1 (3ZG-2 C7N <2D>)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION	REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	83-ZG2-202-71K	1C	O-SERT S ASSY,S	5	83-ZG2-207-119	1A	SHAFT,SLIDE
2	83-ZG2-204-419	0E	GEAR,A	6	87-070-445-010	2C	PICK-UP,KSS-213B
3	83-ZG2-205-219	0E	GEAR,B	7	83-ZG2-233-019	1B	TURN TABLE,A5
4	83-ZG2-220-01K	0E	GEAR,MOTOR 2	A	87-261-032-219	0E	SCREW V+2-3

USE MODEL LIST

CX-NA92 (NSX-A92)
CX-NMT90 (NSX-MT90)
CX-NAV95 (NSX-AV95)
CX-NA71 (NSX-A71)
CX-NMT70 (NSX-MT70)
CX-NAV85 (NSX-AV85)
CX-NA50 (NSX-A50)
CX-NS50 (XG-S50)
CX-NA51 (NSX-A51)
CX-NS52 (NSX-S52)
CX-NMT50 (NSX-MT50)
CX-NAV75 (NSX-AV75)
CX-NK550 (NSX-K550)
CX-NH50 (XR-H5MD)
CX-NA30 (NSX-A30)
CX-NS30 (XG-S30/NSX-S30)
CX-NA31 (NSX-A31)
CX-NA34 (NSX-A34)
CX-NS33
CX-NS32
CX-NS35
CX-NA35
CX-NS36
CX-NAV65 (NSX-AV65)
CX-NAV66 (NSX-AV66)
CX-NH3MD (XR-H3MD)

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER
サージサプレッサ	SERGESUPPRESSOR
セラコン	CAP,CERA

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL
ジグアーム	ARM,SHAFT
ジグガイド	GUIDE,SHAFT
ストラップ	STRAP
トクナベ	S-SCREW
ヒンジ	HINGE
ヒンジビス	S-SCREW
ビスセレート	SCREW,SERRART

サービス技術ニュース	
番号	連絡内容
G－　－	
G－　－	
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912162

アイワ株式会社
AIWA CO.,LTD.

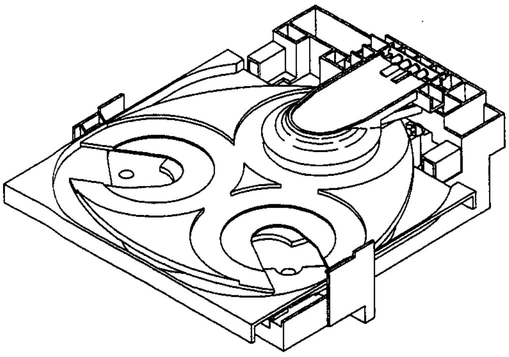
Tokyo Japan

〒110 東京都台東区池之端1－2－11　☎ 03 (3827) 3111 （代表）

aiwa

aiwa SERVICE

4ZG-1Z



CD MECHANISM

- BASIC CD MECHANISM: KSM-2131 BAM / 3ZG-2 C7
- TYPE: English,Japanese

SERVICE MANUAL

CORRECTION

BASIC NAME	DERIVATION NAME					
4ZG-1Z	1D	2D	1MD	–	–	–

■ This Service Manual is replaces “CORRECT Manual”(S/M Code No.09-973-187-50T).

■ 本体マニュアルは(S/M Code No.09-973-187-50T)の訂正版です。

MC-Service

S/M Code No. 09-984-270-60T

■ “このサービスマニュアルにはCDメカニズムの説明は含まれていません。CDメカニズムについては4ZG-1 (S/M Code No..........) のマニュアルを参照して下さい。” の別冊マニュアルの使用文のS/M Code Noに誤りがあります。

(正) 09-973-187-50T ← (誤) 09-974-187-50T

下記の機種の別冊メカニズムは09-973-187-50Tを使用又は取得をして下さい。

■ “The CD mechanism description is not included in this Service Manual. Refer to 4ZG-1 (S/M Code No. ....) for description of CD mechanism.” Please correct the S/M Code No. as shown below as there was mistake in the description of separate manual.

(Correct) 09-973-187-50T ← (Error) 09-974-187-50T

Please obtain and use the separate manual using the Code No. 09-973-187-50T.

1. 09-978-216-8FE (NSX-S50)
2. 09-978-220-4FE (NSX-AV75)
3. 09-978-195-5FP (NSX-AV96)
4. 09-978-220-3FE (NSX-AV75)
5. 09-973-182-5FP (NSX-A71/S70/S74)

6. 09-975-193-5FP (NSX-S70/S74)
7. 09-974-181-9FP (NSX-A92/A94/S90/S94)
8. 09-974-160-3FE (NSX-A30/A31/S33)
9. 09-976-181-6FE (NSX-AV65/AV66)
10. 09-976-186-6FP (NSX-MT70/MT75/AV85)

11. 09-976-207-0FP (NSX-A72/A74)
12. 09-977-190-4FP (NSX-S90)
13. 09-976-181-5FE (NSX-S30/S32/S33/S35/S36)
14. 09-977-202-7FE (NSX-S22/A22)
15. 09-976-188-4FE (NSX-AV75/NMT50/NMT55)

16. 09-977-181-7FP (NSX-AV95)
17. 09-978-206-6FP (NSX-AV85)
18. 09-978-215-8FE (NSX-S22/S23/XG-S22)
19. 09-978-220-2FE (NSX-S52)
20. 09-977-212-8FE (XG-550/NSX-S52)

21. 09-978-181-4FE (NSX-S32/S33/S36/S37)
22. 09-978-213-4FP (NSX-S74)
23. 09-979-222-5FE (NSX-S22)
24. 09-979-214-1FP (NSX-S94/S95)
25. 09-979-219-1FP (NSX-S90)

26. 09-979-225-2FE (NSX-A66)
27. 09-97A-222-7FE (NSX-S38)

お詫び

09-983-257-90Tで発行したCORRECTIONの表現方法は誤解を生じる為、廃棄して下さい。

Notice

Please discard the CORRECTION issued under 09-983-257-90T in order to avoid the expression which can cause misleading.

サービス技術ニュース	
番号	連絡内容
G− −	
G− −	
G− −	

アイワ株式会社
AIWA CO.,LTD.

MC-Service

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